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Indian Sugar Industry—

(1935 ANNUAL)

BY

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Secretary, Indian Chamber of Commerce, Calcutta.*

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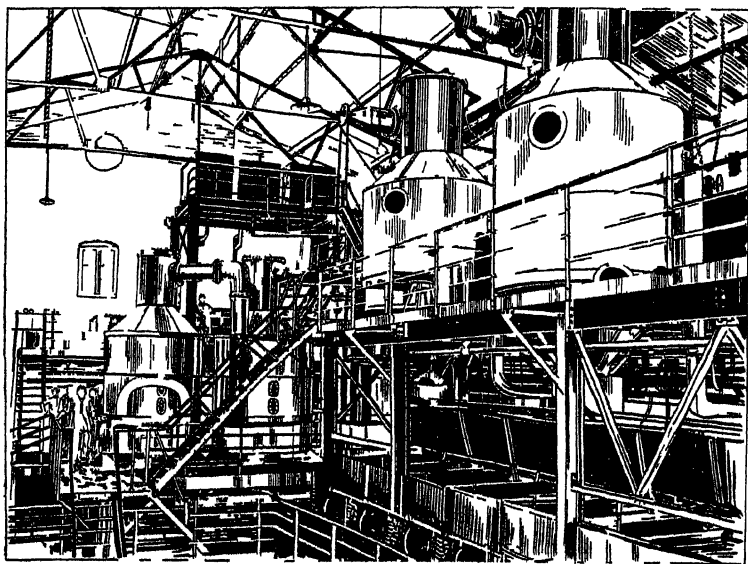
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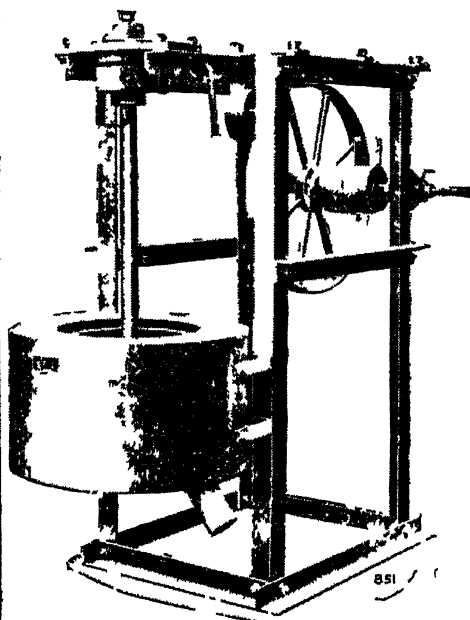
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AUTHOR'S PREFACE.

When publishing my monograph on "The Indian Sugar Industry—Its Past, Present, and Future", in March 1934, I stated "If circumstances are favourable and the need is felt, I hope to make this publication an annual one, and to deal with the latest features in the industry in all parts of the world, in order that those interested in the development of the Indian Sugar Industry may keep abreast of the times and may be able to measure the progress made by the industry from year to year and to effect continual improvements therein, in order to enable India to rank, before long, amongst the most efficient sugar-producing countries of the world, and to supply the requirements of sugar to other parts of the British Empire, if not, indeed to other countries of the world."

Mr. Walchand Hirachand also stated in his foreword "I hope that this monograph will be published annually and Balance Sheets of a few factories will be given therein, for the information of the public, as it will be very useful'.

During the last few months I received several enquiries as to when I was bringing out an Annual for 1935 giving a retrospect of the Industry during the last year and dealing with the problems confronting the Industry at present.

Being thus satisfied about the utility of the publication and assured about its encouraging response from persons interested in the future of this industry, I decided to publish this Annual.

I shall consider myself amply rewarded if this publication will be found useful by all interested in the development and welfare of this industry, and will lead to the initiation of measures for augmenting the efficiency and prosperity of this industry representing a total investment of about Rs. 30 crores, giving employment to about 1 lakh workers (including about two thousand Graduates), stopping a drain of about Rs. 15 crores every year, and supporting about 20 million agriculturists whose interests are indissolubly bound up with the industry.

It is the imperative duty of the Government to give necessary encouragement to the industry by conducting Agricultural, Chemical and Engineering research in order to increase its efficiency by increasing the yield of cane per acre from the average of 14 tons to 40 or 50 tons by improving its quality, by reducing the cost of production of cane, etc. The question of the reduction of the cost of production of cane is very important as upon that rests the possibility of our exporting sugar to other countries, and our ability to stand competition with foreign sugar imported in the country.

In this connection, I would like to draw the attention of the Government to the paramount necessity of supplementing protective duties on sugar by provision for research in accordance with the recommendations of the Tariff Board. The Tariff Board recommended an annual grant of not less than Rs. 10 lakhs to the Imperial Council of Agricultural Research. They even added that increased sums should be allotted to development and research work, since without such measures the real purpose of the protective scheme is likely to be delayed, if not defeated. In connection with research on sugar problems, the Tariff Board went to the length of stating "Indeed we regard this as almost a condition precedent to protection." In their report on the Glass Industry Enquiry conducted in 1932 (published only in June 1935), the Tariff Board referred to the fact that no tangible efforts appeared to have been made by Government to give effect to the proposals made by them in connection with several industries for supplementing protective duties with more constructive methods of assistance. "If this practice is continued," observed the Tariff Board, "the policy of protection may yield few results of any value as regards the development of the industries and may in the end prove little more than a convenient means of raising additional revenues". The Tariff Board felt very strongly on this question and expressed their views with great force in their Report on the Glass Industry. They also stated "Protective duties divorced from the constructive measures proposed in connection with them may represent an immediate gain to public revenues, but they constitute in reality an expensive and possibly wasteful form of assistance to industries." There will be universal agreement with the views of the Tariff Board that "unless public attention is directed to this question, important national interests may be jeopardised." I

earnestly hope that the Government of India will realise the strength of the Tariff Board's views on this question, and undertake to spend liberally on research work as is being done in other sugar-producing countries, like Java and Hawaii and implement without any further delay their proposals in connection with the provision of research.

It would be very fitting if the Government would immediately accept the recommendation made recently by the Sugar Committee of the Imperial Council of Agricultural Research for an annual grant of 2 annas per rupee out of the proceeds of the Sugar Excise Duty for expenditure on research work on problems relating to the Sugar Industry.

I must express my gratefulness to Mr. D. P. Khaitan for having been good enough to read with me some portions of this book in manuscript, and for making some valuable suggestions for enhancing its value.

For the convenience and facility of the reader, I have given a brief summary of the striking facts about the Industry in "The Sugar Industry at a Glance" printed in the earlier part of the book. The Sugar Industry (Protection) Act, 1932, and the Sugar (Excise Duty) Act, 1934, have been printed along with this as they would prove useful for ready reference. 18 Statistical tables have also been included, giving varied and useful information in a very handy form.

In Appendix no. I, I have dealt with the world situation in the Sugar Industry and in Appendix no. II, I have given a complete and up-to-date list of Sugar Mills in India, showing their location, crushing capacity and names of their Managing Agents or Proprietors.

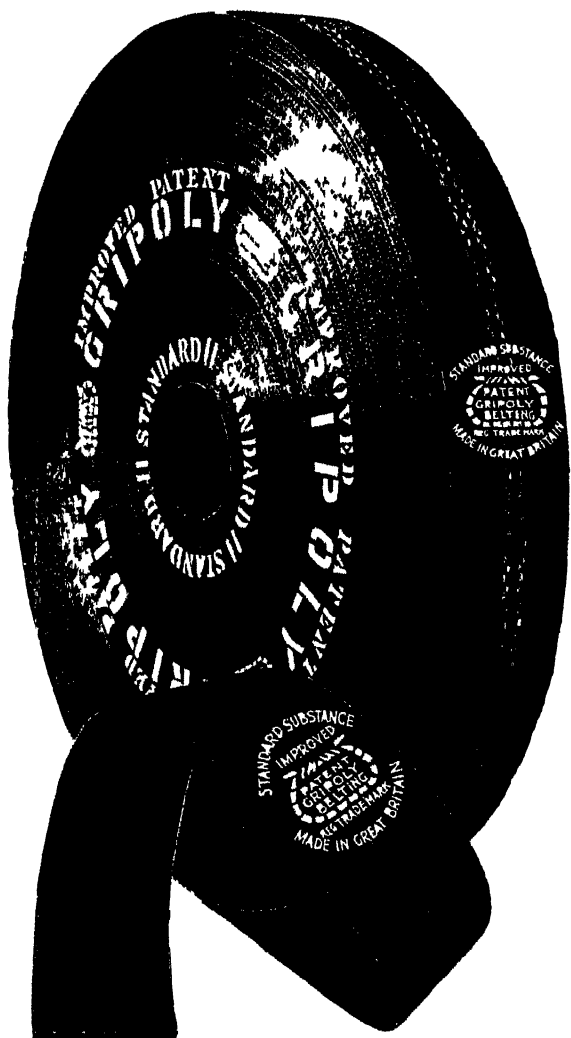
I must at once make it clear that the views expressed in this publication are my own, and have no necessary connection with the views of any of the Associations with which I have the honour to be officially associated.

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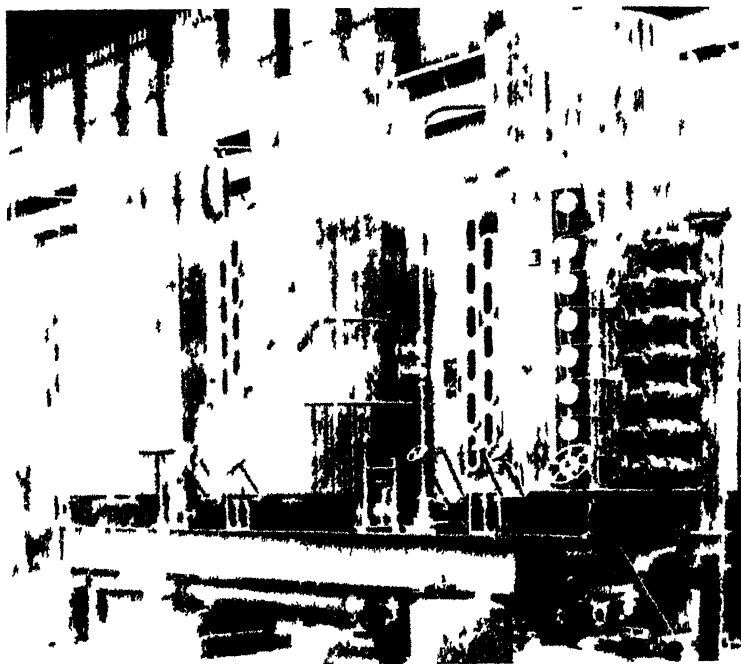
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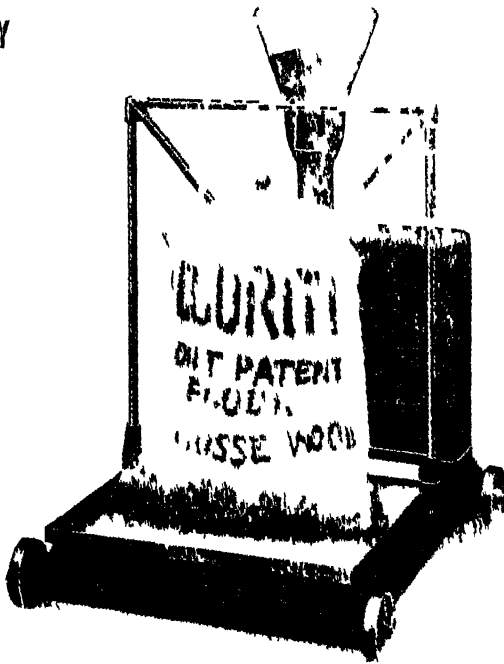
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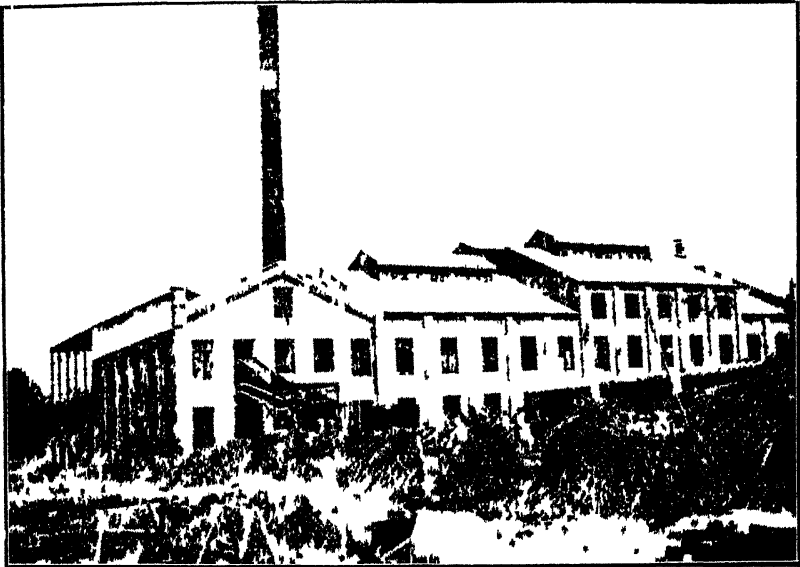
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CONTENTS.

AUTHOR'S PREFACE.

THE SUGAR INDUSTRY AT A GLANCE.

i—xvi

PART I.

Sugar Industry in India—1934-35.

PAGE.

PARAGRAPH	SUBJECT	
1.	Introductory	1
2.	Production of sugar direct from cane—All-India	4
	<i>Table No. I.</i> —Growth of Sugar Industry during the last 5 years	5
3.	Provincial Analysis and Recovery Percentage ...	5
	<i>Table No. II.</i> —Estimated Production of Sugar in modern factories, in 1934-35, in various provinces	6
4.	Growth of the Industry in Provinces... ..	7
	<i>Table No. III.</i> —Comparative growth of the Sugar Industry in the various Provinces ...	7
5.	Area under Sugarcane	8
	<i>Table No. IV.</i> —Acreage and Yield of Sugarcane Crop	9
6.	Uses of Cane	10
	<i>Table No. V.</i> —Uses of Cane.	10
7.	Production of Sugar by Khandsari and from <i>Gur</i> .	11
	<i>Table No. VI.</i> —Production of Sugar and Molasses in India by <i>Gur</i> Refineries	11
8.	Total Production of Sugar in India in 1934-35 ...	12
	<i>Table No. VII.</i> —Total Production of Sugar in India in Tons	12
9.	Consumption of Sugar in India	13
10.	The Problem of Imports of Sugar	14
	<i>Table No. VIII.</i> —C. I. F. Calcutta Price of White Java Sugar D. S. 25 and over	15

PARAGRAPH	SUBJECT.	PAGE.
11.	Duty of Government to maintain Protection ...	16
12.	Theory of Consumers' Burden ...	18
13.	Legislative Enactments ...	20
14.	Fixation of Cane Prices in U. P. and Bihar ...	21
15.	Profits made by the Industry ...	23
	<i>Table No. IX.—Balance Sheets of Sugar Companies</i> ...	23
16.	Total consumption of sugar including <i>Gur</i> (Raw Sugar) in India ...	24
	<i>Table No. X.—Per capita consumption of Sugar and Gur in India</i> ..	25

PART II.

Problems before the Industry and the future of the Industry.

17.	Problems facing the Industry ...	28
18.	Sugarcane—Necessity of Improvement in Cultivation ...	28
19.	Better facilities of cane-transport ...	33
20.	Organisation of cane-supply ...	34
21.	Problem of Molasses ...	35
	<i>Table No. XI.—Production of Molasses in India</i> ...	35
22.	Bagasse ...	37
23.	The Problem of Marketing ...	38
	<i>Table No. XII.—Calculated requirements of sugar in the various Provinces—1934-35</i> ...	38
24.	The Indian Sugar Marketing Board ...	39
25.	The Transport Problem ...	40
26.	Outlook for 1935-36 ...	43
27.	<i>Per Capita</i> Consumption of Sugar ...	43
28.	Possibilities of Export ...	44

Appendix No. I.—World Sugar Situation

29. Broad Outline of World Trade in Sugar ... 49

Table No. XIII.—World Sugar Production and
consumption on percentage basis, 1933-34 ... 50

30. Total World Production, consumption and stocks 52

Table No. XIV.—Yearly Production, consumption
and the carry over of stocks for the last
13 years (in long tons) ... 52

31. International Sugar Convention ... 53

32. Java ... 54

Table No. XV.—Java Sugar Crop, 1931 to 1937... 55

Appendix No. II.—List of Sugar Mills in India,
showing their location, crushing capacity
and the names and addresses of their
Managing Agents or proprietors. (1)—(22)

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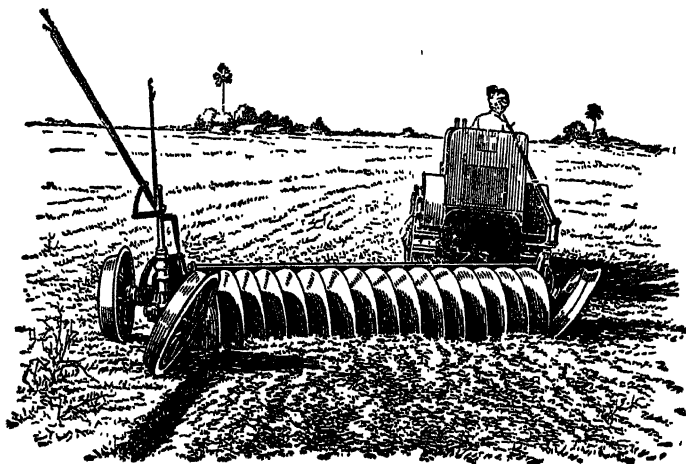
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THE INDIAN SUGAR INDUSTRY AT A GLANCE.

1. Sugar Factories, their Production, and production by Khandsaris.*.

Year.	No. of Factories.			Cane Factory production (Tons.)	Refined from gur (Tons.)	Khandsari Production (Tons)
	All-India.	U.P.	Bihar.			
1931-32 ...	32	14	12	158,581	69,539	2,50,000
1932-33 ...	57	33	19	290,177	80,106	2,75,000
1933-34 ...	112	59	33	453,965	61,004	2,00,000
1934-35 ..	138	65	35	580,000 (Est.)	50,000 (Est.)	1,75,000
1935-36 (Est.)	154	75	36	700,000	50,000	1,75,000

2. Total Production of Sugar and Gur and Yield of Raw Sugar in tons‡.

Year.	Total Sugar.	Cane Factory Production only.		Gur for direct consumption.	Yield of Raw Sugar (Gur.)
		U. P.	Bihar.		
1931-32 ...	4,78,000	66,812	75,081	27,72,000	39,70,000
1932-33 ...	6,45,000	140,344	128,010	32,45,000	46,51,000
1933-34 ...	7,15,000	260,629	139,957	30,00,000 (Est.)	48,72,000
1934-35 (Est.) ...	8,05,000	291,800	180,800	32,50,000	50,85,000
1935-36 (Est.) ..	9,25,000	...	...	32,50,000	...

3. Total Production, Import, and Export of Molasses.

Year.		Total Production of Molasses in India. (Tons).	Import of Molasses in India. (Tons).	Export of Molasses from India (including Palmyra and cane jaggery). (Tons).
1931-32 ...	...	300,000	10,191	740
1932-33 ...	...	330,000	31,991	819
1933-34 ...	...	390,000	2,401	1,201
1934-35 ...	...	440,000 (Est.)	415	1,150
1935-36 ...	...	500,000 (Est.)	...	...

* Estimates of Khandsari Production are conjectural. An Enquiry for ascertaining the same is in progress in the U. P. since 1933.

† Figures are for calendar year. Thus, production shown against 1931-32 is for the calendar year 1932 and so on

‡ India, the home of the sugar industry of the world, continues to lead as the largest sugar producing country in the world. Till 1931 Cuba was leading.

4. Total and *per capita* Consumption of Sugar in India*.

Year.	Consumption of sugar in tons.	Per Capita consumption in lbs.		
		Sugar.	Gur.	Total.
1931-32	9,82,000	6	17.7	23.7
1932-33	9,00,000 (Est.)	5.8	20.4	26.2
1933-34	9,00,000 „	...	...	...
1934-35	9,00,000 „	...	...	...
1935-36	9,00,000 „	...	...	...

5. Yearly World Production, consumption and the carryover of stocks of sugar for the last 4 years in thousand tons†.

Crop year. (September 1st to August 31.)	Opening stocks (September 1st.)	Production.	Consump- tion.	Closing Stocks. (August 1931.)	Percentage relation stocks to Consumption.
1931-32 ...	12,302	26,431	26,724	12,069	45.2
1932-33 ...	12,009	24,692	26,193	10,568	40.3
1933-34 ...	10,568	25,709	26,287	9,990	38.0
1934-35‡ ...	9,990	25,769	26,534	9,225	34.8

6. Average and Maximum Percentage Recovery in India and Java.

Year.	India (average)	U. P. (average)	Bihar (average)	Bombay	Java (average)
1931-32	8.89%	8.59%	9.06%	.....	11.92%
1932-33	8.66%	8.55%	8.60%	10.00 (Max.)	11.16%
1933-34	8.80%	9.08%	8.82%	10.00 (Ave.)	
1934-35 (Est.) ...	9.00%	8.8%	9.3%	10.3 (Ave.)	

*For figures of consumption in other countries, *vide* page 67 of M. P. Gandhi's 'Indian Sugar Industry—its Past, Present and Future'.

†Figures are in long tons. (Long ton = 2,240 lbs. Metric ton = 2,205 lbs.)

‡Estimates for 1935.

7. Capacity of Factories and Duration of Crushing Season.

(a) Average Cane-crushing capacity of Factory per day of 22

hours	...	...	...	...	...	650 Tons.
Maximum capacity of Factory per day	...	...	...	...	...	2,000 „ (1934-35)

				1932-33	1933-34
(b) Average duration of Cane-crushing season All-India	...	...	...	138 days	106 days
(c) Maximum duration	...	...	...	184 „	208 „
(d) Average duration	do.	do.	in U. P.	136 „	112 „
(e) Average duration	do.	do.	in Behar	149 „	105 „

8. Acreage under Sugar-Cane ; Total & Average Production of Cane per Acre.

Year.		Total Acreage under sugar cane.	Acreage under improved varieties.	Average cane production per Acre (in Tons.)	Total Cane crop (in Tons).
1931-32	...	3,076,000	1,170,000	14	43,316,000
1932-33	...	3,321,000	1,845,000	15	51,129,000
1933-34	...	3,308,000	...	16	52,000,000 (Est.)
1934-35 (Est.)	...	3,471,000	...	16	55,600,000
1935-36 (Est.)	...	3,500,000	...	17	59,000,000

9. Uses of Cane.

Year.		Percentage of Cane crushed in factories	Quantity crushed in factories (Tons).	For Gur Manufacture in Tons.	By Khandasari Tons.	For Chewing etc. Tons.	Total cane crop Tons.
1931-32	...	4.1%	17,83,000	30,833,000	5,800,000	5,400,000	43,316,000
1932-33	...	6.6%	33,50,000	36,779,000	5,500,000	5,500,000	51,129,000
1933-34	...	10.0% (Est.)	51,57,000	35,900,000 (Est.)	5,000,000	5,250,000	52,000,000
1934-35 (Est.)	...	11.7%	64,50,000	36,200,000	5,000,000	7,350,000	55,000,000

10. Cost of Production of Cane per Maund.

- (a) Definite figures are not available. Cost of Production varies from Province to Province from annas 0-2-0 to annas 0-10-0 per md.
- (b) Average Cost of Production in Bihar, according to Bihar Government figures for 1932-33 was roughly between 2½ to 3 annas per maund.
- (c) Enquiry into Cost of Production undertaken by Imperial Council of Agricultural Research ; Report awaited 1936

11. Average Price of Cane paid by Factories to Cultivators.

1932-33 Rs. 0-5-6 per maund.
 1933-34 „ 0-5-6 „

The minimum price for the purchase of cane was fixed by Legislation in U. P. and Behar during 1934-35 under Sugar Cane Rules framed under the Sugarcane Act, 1934. The following schedules were adopted by the respective provinces for fixing the minimum price for each fortnight according to variations in the price of sugar, during the season 1934-35 :—

BIHAR.					THE UNITED PROVINCES.						
Average price of sugar.				Corresponding Minimum price of Sugarcane intended for use in—		Average price of sugar.				Corresponding Minimum price of Sugarcane intended for use in—	
				Open pan factories.						Open pan factories.	
				Vacuum pan fac-						Vacuum pan fac-	
				tories.						tories.	
Rs. As. Rs As.				As. P.		Rs. As. Rs As.				As P	
				As P.						As. P.	
Above 6 8 to 7 0				2 6	4 3	Above 6 8 to 7 0				2 10	4 3
„ 7 0 to 7 8				2 8	4 6	„ 7 0 to 7 8				3 0	4 6
„ 7 8 to 8 0				2 10	4 9	„ 7 8 to 8 0				3 2	4 9
„ 8 0 to 8 12				3 0	5 0	„ 8 0 to 9 0				3 4	5 0
„ 8 12 to 9 4				3 2	5 3	„ 9 0 to 9 8				3 6	5 3
„ 9 4 to 9 12				3 4	5 6	„ 9 8 to 10 0				3 8	5 0
„ 9 12 to 10 4				3 6	5 9						

**12. Imports of sugar (excluding re-exports and Molasses)
in tons.**

Port.	1929-30.	1930-31.	1931-32.
	Tons.	Tons.	Tons.
Rangoon	42,690	40,288	28,335
Madras	90,899	83,611	79,054
Bombay	211,028	212,847	128,884
Karachi	218,690	230,569	109,391
Calcutta	368,969	330,581	165,655
Total (India) Tons.	932,276	897,896	511,319
Total value Rs. ...	15,60,64,802	10,89,88,813	6,06,26,542

(Contd.)

Port.	1932-33.	1933-34.	1934-35.
	Tons.	Tons.	Tons.
Rangoon	26,391	19,640	17,428
Madras	53,782	53,884	49,793
Bombay	111,346	97,408	80,063
Karachi	85,618	59,822	50,282
Calcutta	88,570	19,022	22,762
Total (India) Tons ...	365,707	249,776	221,328*
Total value Rs. ...	4,17,84,671	2,63,71,431	2,04,75,462

*Government's estimate of Import of sugar for 1935-36— 90,000 tons
Import during 2 months (April and May) in 1935— 27,000 tons.

13. Import duty on Sugar and Sugarcandy.

On Sugar and Sugarcandy* per cwt.	Protective duty. Per cwt.	Surcharge.	Total duty. Per cwt.
From 1st April, 1932 to 31st March, 1934 ...	7 4 0	1 13 0	9 1 0
From 1st April, 1934 ...	7 12 0	1 5 0 (Equivalent Excise Duty)	9 1 0

14. Yield of Revenue from Import duty on Sugar.

Year	Yield of Revenue (in round figures). Rs.
1931-32 ...	8,00,00,000
1932-33 ...	6,84,00,000
1933-34 ...	4,72,00,000
1934-35 ...	3,81,00,000
1935-36 (Budget Estimate) ...	1,75,00,000

15. Excise Duty† on Factory Sugar produced in Br. India and Yield of Revenue from it during 1934-35.

Class of Sugar.	Amount of Duty per cwt.	Yield of Revenue (1934-35).
	Rs. As. P.	Rs. As. P.
Khandsari Sugar ...	0 10 0	1,21,000 0 0
All other Sugar except palmyra Sugar ...	1 5 0‡	95,94,000 0 0
Palmyra Sugar ...	.....	.....
TOTAL ...	.....	97,15,000 0 0

Budget Estimate of Revenue from Excise Duty for 1935-36 Rs. 1,50,00,000.

*From 20th February, 1934, a revenue duty of Rs. 10-8-0 per cwt. was imposed on Sugarcandy in place of Rs. 9-1-0 per cwt.

†Imposed from 1st April 1934.

‡Roughly equivalent to Rs. 0-15-4½ per maund.

16. Price of Sugar. (During 1934.)

Indian, Cawnpore market, 1st Quality Special)	... (Approx)	Rs. 8-6-0 per md.
Imported Sugar, at Calcutta	(Approx)	„ 9-8-0 „ „

17. Transportation Cost on Sugar.

Railway Freight in India, About 600 miles	... about Rs. 0-10 0 per md.
Steamer Freight From Java to Cal- cutta	... about Rs. 0-3 0 per md.

18. Expenditure on Research (through the Imperial Council of Agricultural Research.)

Total Amount spent from 1930-31 to 1933-34	... ..	Rs. 11 lakhs.
Total Amount proposed to be spent upto 1937-38	... ..	Rs. 20 lakhs.

19. Total value of sugar machinery imported.

Source.	1932-33	1933-34.	1934-35
	Rs.	Rs.	Rs.
United Kingdom ...	91,48,018	1,95,87,559	73,60,509
Other Countries ...	61,63,108	1,40,51,255	31,84,930
TOTAL ...	1,53,11,126	3,36,38,814	1 05,45,439

20. Sugar Industry (Protection) Act, 1932.
(Printed overleaf).**21. Sugar (Excise Duty) Act, 1934.**
(Printed overleaf).



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Sugar Industry (Protection) Act, 1932.

ACT NO. XIII of 1932.

An Act to provide for the fostering and development of the Sugar Industry in British India.

WHEREAS it is expedient, in pursuance of the policy of discriminating protection of industries in British India with due regard to the well-being of the community, to provide for fostering and development of the sugar industry for a period ending with the 31st day of March, 1946, by determining the extent of the protection to be conferred up to the 31st day of March, 1938, and by making provision for the determination of the extent of the protection to be conferred for the remainder of the period. It is hereby enacted as follows :—

Short Title.

1. This Act may be called the Sugar Industry (Protection) Act, 1932 (Amendment of Schedule II, Act VIII of 1894).

2. (1) In the Second Schedule to the Indian Tariff Act, 1894 (VIII of 1894), there shall be made the amendments specified in the Schedule to this Act.

(2) The amendments made by sub-section (1) shall have effect up to the 31st day of March, 1938.

Statutory Inquiry.

3. The Governor-General-in-Council shall cause to be made by such persons as he may appoint in this behalf, an inquiry to ascertain if the protection of the sugar industry during the period from the 31st day of March, 1938, to the 31st day of March, 1946, should be continued to the extent conferred by this Act, or to a greater or lesser extent, and shall, not later than the 31st day of March, 1938, lay his proposals in this behalf before the Indian Legislature.

Power to Increase Duty Imposed by Section 2.

4. If the Governor-General-in-Council is satisfied, after such inquiry as he thinks fit, that sugar not manufactured in India is being imported into British India at such a price as is likely to render insufficient the benefits intended to be conferred upon the sugar industry by the duties imposed by Section 2, he may by notification in the *Gazette of India*, increase such duty to such extent as he thinks fit.

Power to make Rules requiring returns.

5. The Governor-General-in-Council may, by notification in the *Gazette of India*, make rules requiring the owners of sugar factories in British India to make such returns relating to the production of sugar in their factories as the Governor-General-in-Council may consider to be desirable, prescribing, the form of such returns, the dates of their submission and the authority to which they shall be submitted.

Power to make Rules requiring Notices of Prices of Sugarcane to be posted up in Sugar Factories.

6. (1) The local Government may, by notification in the local official Gazette, make rules requiring that there shall be affixed, in conspicuous places near the entrances to sugar factories, notices for the information of sellers of sugarcane, and such rules may prescribe the form and languages of such notices; and the particulars to be included therein relating to prices at which sugarcane is being bought at the factory.

(2) In making such rules the local Government may provide that a contravention thereof shall be punishable with fine which may extend to five hundred rupees.

Explanation.—In this section and in section 5 “factory” has the meaning assigned to it in clause (3) of Section 2 of the Indian Factories Act, 1911 (XII of 1911).

(Schedule overleaf.)

THE SCHEDULE.

(See Section 2)

Amendments to be made in Schedule II to the Indian Tariff Act, 1894.

1. In Part II.

- (a) For the heading "Sugar" and Item No. 34, the following heading and item shall be substituted, namely :—

Other Food and Drink.

34 Molasses—*ad valorem* 25 per cent.

- (b) the heading ' Saccharine' above Item No. 34-A shall be omitted ; and

- (c) the heading "Other Food and Drink" above Item No. 35 shall be omitted.

2. In Part VII, after Item No. 156, the following heading and item shall be inserted, namely :—

"SUGAR"

137 Sugar and sugarcandy, excluding confectionery Rs. 7/4/- per cwt.

3. Item No. 156-A shall be re-numbered as Item No. 150.

4. In Part VII under the head "Miscellaneous"

- (a) in the first column, the figures "157", "158" and "159" shall be omitted .

- (b) the heading "Matches," Undipped Splints and "Veneers" shall be numbered as Item No. 159 ; and

- (c) in the second column, the entries relating to "Matches," "Undipped Splints" and "Veneers" shall be lettered respectively, as sub-items (a), (b) and (c) of Item No. 159.
-

Sugar (Excise Duty) Act, 1934.*

Act No. XIV of 1934.

*An Act to provide for the imposition and collection of
an Excise Duty on Sugar.*

WHEREAS it is expedient to impose an excise duty on sugar produced in factories and to provide for the collection thereof : It is hereby enacted as follows :—

1. (1) This act may be called the Sugar (Excise Duty) Act, 1934.
Short title and extent.

(2) It extends to the whole of British India ; including British Baluchistan and the Sonthal Parganas.

2. In this Act, unless there is anything repugnant in the subject or context :—
Definitions.

(a) "Factory" means any premises wherein, or within the precincts of which twenty or more workers are working or were working on any day of the preceding twelve months, and in any part of which any manufacturing process connected with the production of sugar is being carried on or is ordinarily carried on with the aid of power ;

(b) "owner" includes any person expressly or impliedly authorized by the owner of a factory to be his agent in respect of such factory ;

(c) "Sugar" means any form of sugar containing more than ninety per cent. of sucrose ;

* Received assent of the Governor-General on 1st May, 1934.

(d) "Khandsari Sugar" means sugar in the manufacture of which neither a vacuum pan nor a vacuum evaporator is employed, and

(e) "Palmyra Sugar" means sugar manufactured from jaggery obtained by boiling the juice of the palmyra palm.

3. (1) A duty of excise shall be levied on all sugar produced in any factory in British India and either issued out of such factory on or after the 1st day of April, 1934, or used within such factory on or after the said date in the manufacture of any commodity other than sugar, and shall be payable by the owner of the factory.

Imposition of duty on sugar.

(2) The duty payable under sub-section (1) shall be at the following rates, namely :—

- (i) on khandsari sugar at the rate of ten annas per cwt. ;
- (ii) on all other sugar except palmyra sugar at the rate of one rupee and five annas per cwt. ;
- (iii) on palmyra sugar at such rate, if any, as may be fixed in this behalf by the Governor-General-in-Council after such enquiry as he may think fit.

4. (1) If any duty payable under section 3 is not paid within the time fixed by rules made in that behalf under this Act, it shall be deemed to be an arrear, and the authority to which such duty is payable may, in lieu thereof, recover any sum not exceeding double the amount of duty unpaid which such authority may in its discretion think it reasonable to require.

Recovery of duty with penalty.

(2) An arrear of duty, or any sum recoverable in lieu thereof under this section, shall be recoverable as an arrear of land revenue and shall be recoverable in addition to, and not in substitution for, any other penalty incurred under this Act.

5. No person shall issue any sugar out of a factory, except in accordance with the provisions of rules made in that behalf under this Act, or until such rules are made, in accordance with the general or special orders of the Local Government.

Issue of sugar from factory.

6. (1) The Governor-General-in-Council may, by notification in the *Gazette of India*, impose on sugar brought into British India from the territory of any State in India, not being territory which has been declared under

Power of Governor General in Council to impose customs duty on sugar.

VIII of 1894. section 5 of the Indian Tariff Act, 1894, to be foreign territory for the purposes of that section, a duty of customs equivalent to the excise duty imposed by this Act on Sugar produced in British India.

(2) The Governor General-in-Council may, by notification in the *Gazette of India*, declare that the provisions of the Land Customs Act, 1924, shall apply to the levy of the duty of customs imposed under this section, and on such declaration that Act shall apply as if the expression "foreign territory" in that Act included territory forming part of a State in India.

XIX of 1924.

7. Whoever contravenes the provisions of section 5 shall be punishable with fine which may extend to two thousand rupees.

Penalty for issue of sugar from factory in contravention of section 5.

8. Whoever evades or attempts to evade the payment of any duty payable by him under this Act, or fails to supply any information which he is required by any rule made under this Act to supply, or knowingly supplies false information, shall be punishable with imprisonment which may extend to six months, or with fine which may extend to two thousand rupees, or with both.

Penalty for evasion of duty or failure to supply information.

9. Any court trying offence under this act, may order that any sugar, together with the packages or coverings thereof, in respect of which the Court is satisfied that an offence under this Act has been committed, shall be forfeited to His Majesty.

Power of Courts to order forfeiture of sugar.

10. The Governor-General-in-Council may, by notification in the *Gazette of India*, declare that any provisions of Act VIII of 1878 to the duty on sugar. of the provisions of the Sea Customs Act, 1878, relating to the levy of and exemption from customs duties, drawback of duty, warehousing, offences and penalties, confiscation, and procedure relating to offences and appeals shall, with such modifications and alterations as he may consider necessary or desirable to adapt them to the circumstances, be applicable in regard to like matters in respect of the duty on sugar imposed by section 3. VIII of 1878.

11. (1) The Governor-General-in-Council may, by notification, in the *Gazette of India*. make rules to carry into effect the purposes and objects of this Act. Power of Governor-General-in-Council to make rules.

(2) In particular, and without prejudice to the generality of the foregoing power, such rules may—

(a) provide for the assessment and collection of the duty and the authorities by whom functions under this Act are to be discharged, the issue of notices requiring payment, the manner in which the duty shall be payable and the recovery of arrears ;

(b) regulate the issue of sugar out of or the use of sugar in the manufacture of commodities within any factory and provide for the appointment of officers of Government to supervise within any factory such issue or use ;

(c) impose on the owners of factories, and on persons engaged in the sale of sugar, the duty of furnishing information, keeping records and making returns and prescribe the nature of such information and the form of such records and returns, the particulars to be contained therein, and the manner in which they shall be verified ;

(d) provide for the detention of sugar for the purpose of exacting the duty, the confiscation otherwise than under section 9 of sugar in respect of which breaches

of the Act or rules have been committed, and the disposal of sugar so detained or confiscated ;

(e) authorize and regulate the inspection or search of any place or conveyance used for the manufacture, storage or carriage of sugar ; and

(f) authorize and regulate the composition of offences against or liabilities incurred under the Act and rules.

(3) In making any rule under this section the Governor-General-in-Council may provide that a breach of the rule shall, where no other penalty is provided by this Act, be punishable with fine not exceeding two thousand rupees.

(4) The Governor-General-in-Council may delegate all or any of his powers under this section to a Local Government.

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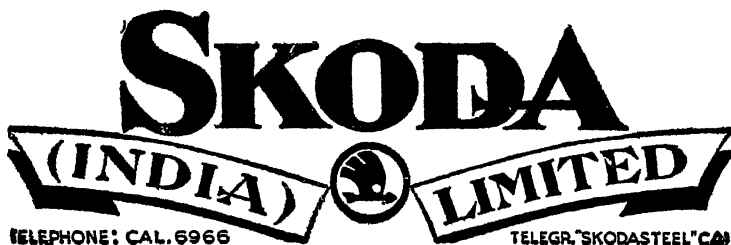
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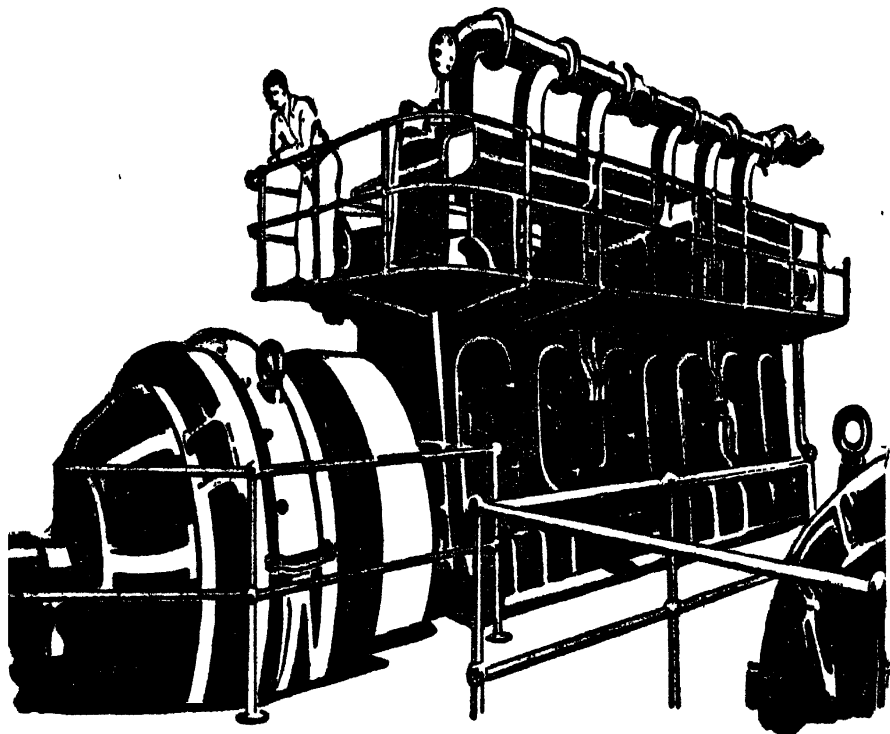
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THE INDIAN SUGAR INDUSTRY— (1935 ANNUAL)

PART I.

Sugar Industry in India—1934-35.

1. Introductory

THE year 1934-35 may well be characterized as an uneventful year, as far as the further development of the sugar industry, and investment of new capital therein are concerned, when compared with the period of remarkably heady and satisfactory expansion of the industry during the years immediately following the grant of tariff protection to it by the Government in April, 1932. While the number of factories working in the season 1933-34 suddenly sprung up to 115 from 57 in 1932-33 i.e., a rise of nearly 200 per cent., the number of new factories added during 1934-35 was only 23*. The addition is expected to be smaller still in the next and subsequent seasons. The factors responsible for this check on the growth of the industry are numerous, but prominent among these are: (1) imposition of an excise duty† at the high rate of Rs. 1-5-0 per cwt. (roughly equivalent to Rs. 0-15-4 per maund) on factory-made sugar in India with effect from 1st April 1934, (2) the feeling that the production of existing factories would be enough to meet the demand, (3) the fear of continued import of sugar from Java at lower prices inspite of the protective duty, in order to reduce her huge stocks, (4) the apprehension about the future prospects of the industry caused in the minds of industrialists, consequent on the passage of enabling legislation by the Government of India (Sugar Cane Act, 1934) for fixation of minimum prices of cane, and by enactment of Rules for fixation of minimum price of cane

* For a complete list of Sugar Mills showing their location, crushing capacity and the names and addresses of their Managing Agents or Proprietors, *vide* Appendix No. II.

† For Sugar (Excise duty) Act, 1934, *vide* "The Sugar Industry at a Glance,"

(varying with the price of Sugar) in the United Provinces and Bihar, two of the most important sugar manufacturing Provinces, (5) the absence of realisation of any price for molasses which added to the cost of production and reduced to that extent the protection afforded by the import duty, and (6) the feeling of the manufacturer that the Government were not prepared to undertake expenditure of money for improvement of cane, for technological research, etc., with a view to increase the efficiency of the industry, even though they expected to realise large revenue from the excise duty on sugar. (The total amount realised from the excise duty during 1934-35 on factory sugar was Rs. 95,94,000 and from Khandsari sugar Rs. 1,21,000, the total being Rs. 97,15,000.)

The absence of a sympathetic attitude displayed by the Government of India when approached by the industry and some local Governments for a further measure of protection to counteract the abnormal and progressive decline in the price of Java sugar, tended to create the impression that the Government were of the opinion that the industry was making abnormally high profits, and that out of their apprehension of the additional burden that would fall on the consumers, the Government would not give any further protection. It was also surprising that even in the face of a regular and consistent decline of price of Java sugar which endangered the position of the industry, the Government of India preferred to adopt a policy of waiting and watching, although the Governor-General-in-Council could increase the protective duty to such extent as he thought fit under provision of Section 4 of the Sugar Industry (Protection) Act 1932*, by a notification in the *Gazette of India*. In the subsequent pages we will show that the belief of abnormal profits being made by the industry is entirely erroneous. Owing to the absence of any return by sale of molasses, the payment of the excise duty, the considerable fall in the price of sugar due partly to cut-throat competition of Java which was anxious to deplete her stocks by sale at any price, the poor and small crop of cane leading to a shorter crushing season in the United Provinces and Bihar, the fall in recovery of sugar due to disease in cane in U. P., the fixation of the prices of cane by legislation at a higher level due to an *ad hoc* method of linking it with the

*For the text of the Act, *vide* "The Sugar Industry at a Glance",

price of sugar, aggravated by a faulty method of determining the actual price of sugar (the market quotation for best quality of sugar being taken in place of actual price received by each factory) etc., the profits of the industry dwindled considerably during 1934-35. For these and other reasons, the development of the industry received a definite check.

It is generally recognized that India has now definitely reached a stage when she can produce her *present* requirements of sugar from internal sources, without depending at all on supplies of sugar from foreign countries. In fact, taking into account the estimated production of factories already projected for working, we feel that India would be able to produce sugar during the next season in quantities which would enable her to export it to other countries also.

The industry has been confronted with a host of new problems* to which it must give its immediate and careful attention. Some of these problems are stated here: (1) utilisation of molasses and of bagasse, (2) reduction of cost of cane, (3) improvement of quality of cane, (4) undue competition in purchase of cane, (5) supplies of cane in areas adjacent to factories, (6) provision of irrigation and drainage facilities, (7) extension of duration of crushing season, (8) marketing and distribution of sugar, (9) technological research for increasing recovery percentage of sugar and the efficiency of the industry, (10) fixation and improvement of standards of quality of sugar etc. After a period of protection for 3 years, the Industry has now reached a stage when it must survey the position all-round and prepare itself to face the uphill task of establishing itself on a firm and solid basis by tackling these problems with energy, will and skill, and by increasing its efficiency to such an extent that we can emulate the example of the Hawaiian and Java Industry, within a measurable period of time, and before the period of protection expires in 1946.

1934-35 may well be reckoned as the beginning of a new and important period in the history of the growth of this great Industry, the ultimate success of which will depend considerably

* *Vide* Author's "The Indian Sugar Industry—Its Past, Present, and Future" 1934, p. 350.

on the extent of close co-operation on the part of all interests concerned *viz.*, the industrialists, the growers, the Government and the consumers. Let us hope that in recognition of the advantages which will accrue to a large number of cultivators, the industrialists, the public, and to the country generally, such co-operation will be readily forthcoming, and that as a result, the industry will be able to stabilise itself and attain a high level of efficiency, at an early date. Before turning our attention however, to the directions in which the industry needs improvement, it will be useful and instructive to review the vicissitudes of the industry during the last season, *i.e.* 1934-35.

2. Production of Sugar direct from cane— All India.

The number of new factories which worked for the first time in 1934-35 was only about 23 as compared to 58 in the previous season. There has been however, a proportionately larger increase in the quantity of cane crushed and sugar produced than in the number of factories, due to several reasons. Firstly, apart from the new factories which commenced work during the season under review, several old factories increased, as usual, their crushing capacities. Secondly, some of the new factories which worked for only a short period in 1933-34 worked for the full season during 1934-35, and thirdly, during the previous season *i.e.* in 1933-34, crushing operations in many of the factories in North Bihar were seriously interfered with on account of the terrible earthquake of January 1934, which resulted in a considerable reduction of the quantity of cane crushed and sugar produced. Table No. I below shows at a glance the growth of the modern cane sugar industry from the pre-protection period to the present day and the estimates for the coming season. The figures of production for 1934-35 are estimates of the Sugar Technologist to the Imperial Council of Agricultural Research, given in his latest forecast of Sugar production in the "Trade Journal" dated the 25th April 1935, but according to our calculation, it appears to us that his estimates of the quantity of cane crushed and sugar produced are a bit conservative. The total production of sugar directly from cane during 1934-35 is expected by us to be about 6,00,000 tons. We hope that our estimate will

be found to be nearer the final figures when they are ready. The figures for 1935-36 are our estimates.

TABLE No. I.

Growth of the Sugar Industry during the last 5 years.

Year.	No. of Factories Working.	Cane crushed Tons.	Sugar produced (from cane only) Tons.
1931-32 ...	32	1,783,499	1,58,581
1932-33 ...	57	3,350,231	2,90,177
1933-34 ...	115*	5,157,373	4,53,965
1934-35 ...	138	6,450,000 (Est.)	5,80 000 (Est.)' *
1935-36 ...	154 (Est.)	7,750,000 (Est.)	7,00,000 (Est)

3. Provincial Analysis and Recovery Percentage.

Though one factory in the Bombay Presidency started crushing as early as end of October (1934) the cane-crushing season in Northern India and in U. P. commenced rather late. Most of the factories started crushing generally towards the end of November, a few days later than in the previous season. Although there was no unusual interference like the earthquake of 1933-34, the crushing operations during the last season in the two major sugar producing parts *viz.*, United Provinces & Bihar were not so successful due to untimely rains, frost, floods and above all, the attack of insect-pests which rendered the quality of cane very poor, particularly in Western U. P. and the Punjab where the factories were greatly handicapped due to an abnormally low recovery. The condition was so serious that many factories contemplated closing down in December, only a few days after they started, as it was not profitable to manufacture sugar from such poor cane. The situation improved a little, however, as the season advanced, but still Western U. P. on the whole did not have a smooth crushing season this year and the recovery

*Returns from three factories were not received.

**Our own estimate is over 6,00,000 tons.

for the season in some cases is stated to have been as low as 4% to 5%. In the face of such abnormally low recovery in many of the factories, it is probable that the final average percentage recovery figure for All-India for 1934-35 will not show a rise over the previous year as indicated by the figures given by the Sugar Technologist in his final forecast, where he places the average recovery for all India at 9% as against 8.80 in 1933-34. (*Vide* Table No. II, given below).

TABLE No. II.

Estimated Production of Sugar in modern factories, in 1934-35, in various provinces.

Province.	No. of factories working.	Cane crushed. Tons.	Sugar made. Tons	Percentage of total production in India.	Recovery percentage.	
					1933-34.	1934-35. (Esti.)
United Provinces (a) ...	65	33,45,000	2,94,800	50.8	9.08	8.8
Bihar & Orissa ...	35	20,49,000	1,90,800	32.9	8.32	9.3
Madras (a) ...	10	2,08,000	19,000	3.3	8.00	9.1
Bombay (a) ...	6	2,28,000	23,600	4.1	10.00	10.3
Burma ...	3	1,42,000	12,700	2.2	...	8.9
Bengal ...	5	1,37,000	10,800	1.9	7.70	7.9
Punjab (a) ...	7	97,000	6,000	1.0	7.00	6.2
Indian States ...	7	2,44,000	22,800	3.8	...	9.1
Total ...	138	64,50,000	5,80,000	100	8.80	9.0

One possible explanation is that the recovery percentage might show a rise due to the smaller number of days on which the cane factories crushed cane. Due to factories having closed earlier, they did not crush overripe cane, and therefore the average recovery percentage may be found to be high. It would be however misleading to conclude from this that there was greater efficiency in crushing. The increase, if there is any, would be due to confining crushing operations during a period of better recovery for shorter season, and not throughout a full season, particularly in the early and closing periods when extraction is small.

(a) Excluding Indian States.

'Average Recovery Percentage for All India.

At least for the factories in the United Provinces we feel that the average recovery percentage for 1934-35 will very likely turn out to be lower than 8·8, as forecasted at present by the Sugar Technologist.

Table No. II above shows the number of Sugar factories and results of their working for the season 1934-35 province by province. It will be seen therefrom that the number of factories as well as production of sugar in the United Provinces alone, is slightly higher than the total number of factories, and than the production of sugar in all the other remaining Provinces of India put together. Bihar is a good second and Madras occupies the third place so far as the number of factories is concerned, though its production is less than that of Bombay.

4. Growth of the Industry in Provinces.

It will be interesting here to follow the growth of the Sugar Industry in the various provinces since the grant of protection. A comparative table showing the number of factories working in each province since 1932 and of those expected to work during 1935-36 is given below :—

TABLE No. III.

Comparative growth of the Sugar Industry in the various Provinces.

Provinces.	No. of factories working.			
	1932-33.	1933-34.	1934-35.	1935-36. (expected to work.)
1. United Provinces (a)	33	59	65	73
2. Bihar & Orissa ...	19	33	35	36
3. Madras (a) ...	2	4	10	11
4. Bombay (a) ...	1	4	6	6
5. Burma ...	1	1	3	3
6. Bengal ...	...	2	5	9
7. Punjab (a) ...	1	5	7	8
8. Indian States ...	...	4	7	8
TOTAL ..	57	112 (b)	138	154

(a) Excluding Indian States.

(b) The total was 115, but returns were not received from 3 factories,

It will be seen that the United Provinces and Bihar are almost overcrowded with factories, and there would appear to be less scope for projection of new factories there. But in the far-flung territories which are nearer to the sea-coast *viz.*, Bombay*, Madras, Bengal and Burma, the number of factories is rapidly increasing and there would appear to be scope for expansion. Out of the total addition of 23 factories in India during the year 1934-35, Bengal and Madras alone are responsible for as many as 9 new factories. The estimated consumption of sugar by each province is given elsewhere in connection with the treatment of the problems of Transport, but from the figures given above, it is clear that each Province is striving to take full advantage of the protection afforded by the Central Government increasing its production, and reducing its dependence on supplies from outside†. The completion of Mettur Dam in Southern India opens out new possibilities of a further extension of the cane crop there and consequent extension of the Industry. The Government of H. E. H. the Nizam are also seriously considering the prospects of developing a cane-sugar Industry in their territory in the near future.

5. Area Under Sugarcane.

From the production of Sugar, let us now turn to its raw-material, the Sugarcane. The only official figures available in this connection are of the acreage of land under sugarcane and of the approximate production of *gur* from cane. The absence of any figures of the estimated tonnage of cane grown on the land leaves a gap which is a great handicap in the way of a scientific study of the cane problem. The total area under sugarcane in 1934-35, however, is estimated to have been 34,71,000 acres as compared with 33,08,000 acres in 1933-34, and the calculated production of sugar-cane therefrom to be about 5,50,00,000 tons.

It is a matter of regret that the attitude of the Government of Bombay towards the growth of this new industry in that province has so far been very disappointing, *e.g.*, in the matter of fixing water-rates supplied from Irrigation canals to the factories for plantation. The assurances on which the factories came into existence, have not been fulfilled and instead one-sided and unfair agreements are being imposed on factories by the Government.

‡Bengal also is likely to develop manufacture of sugar, for which she has good possibilities. The restriction of jute crop makes it necessary for her to develop this industry.

The table below will show the acreage and yield of cane in the various Provinces during the last two years.

TABLE No. IV.
Acreage and yield of Sugar Cane crop.

Provinces and States.	Area (1,000 acres.)		Yield of raw Sugar or Gur (1,000 tons.)	
	1933-34	1934-35	1933-34.	1934-35.
United Provinces (a) ...	1,734	1,839	2,570	2,758
Punjab ...	466	462	364	316
Bihar and Orissa ...	418	415	623	673
Bengal ...	257	276	457	492
Madras ...	120	122	325	321
Bombay (b) ...	103	112	270	258
North West Frontier Province ...	49	43	54	43
Assam ...	35	33	40	32
Central Provinces and Berar ...	29	28	48	40
Delhi ...	3	8	1	5
Mysore ...	42	45	41	41
Hyderabad ...	46	51	72	93
Baroda ...	2	2	3	3
Bhopal (Central India) ...	4	5	4	4
Total ...	3,308	3,471	4,872	5,085

Though the replacement of deshi canes by improved varieties is progressing and the proportion of the area under the latter to the total area under sugarcane is more than 50%, the attack of disease in cane in certain parts of both United Provinces and Bihar not only reduced the advantage of such improved varieties to nil but proved a definite source of loss and anxiety to manufacturers and the ryots. It is apprehended that due to the severe cold spell and frost of January 1935, the total yield might turn out to be less than that shown above. An investigation carried out in certain parts of Bihar by the Department of Agriculture shows

(a) Including Indian States.

(b) Including Sind and Indian States.

that on the average about 30% of the cane crop was diseased. We have already noticed above that in Western U. P. also, there was an attack of *I'yilla* in cane and the average recovery obtained by mills in that area is said to be not more than 6% for the whole season. The prosperity of the Sugar Industry depends to a large extent on sound and good cane, with plenty of sucrose, of early and late ripening varieties in order to extend the crushing season and to reduce the cost of production of sugar. A diseased crop of cane means loss not only to the manufacturer but also to the immense number of agriculturists engaged in the cultivation of cane. The question of improvement in the cultivation of cane is treated more fully later on.*

6. Uses of Cane.

We have seen that the estimated total production of Sugar cane in 1934-35 was about 5,50,00,000 tons whereas the total quantity of cane estimated to have been crushed this season by Sugar factories was only about 64,50,000 tons or about 12% of the total crop. Information regarding the different uses to which the cane crop is applied will be interesting and a table showing the various uses of cane along with the percentage of each to the total production is given below :—

TABLE No. V.

USES OF CANE.

(*Figures given are approximate estimates for 1934-35.*)

Uses to which cane is put.	Quantity (Tons).	Per cent. of cane used to total production.	Remarks.
1. For crushing in modern Sugar Factories ...	64,50,000	11.7%	.....
2. For Khandsaris* ...	59,00,000	9.0%	*Approximate. No figures available.
3. For Gur Manufacture* ...	3,72,00,000	67.7%	*Includes both for direct consump- tion and for re- fining into sugar.
4. For Chewing and Plant- ing sets, etc. ...	63,50,000	11.6%	.....
Total production of Sugarcane ...	5,50,00,000.	100%	

*For a detailed and comparative study of the problems of yield of cane per acre, sucrose content, etc., in India and in other countries *vide* Author's Monograph on "Indian Sugar Industry—its Past, Present and Future,"—1934,

7. Production of Sugar by Khandsari and from Gur.

Refined Sugar is made by 3 different processes in India *viz.* (1) Direct from cane by modern vacuum pan factories (2) from cane by indigenous open pan factories *i.e.* *Khandsaris* (through the intermediate process of *Rab*) and (3) from Gur refined in modern refineries.*

We have already dealt with the production of Sugar by the first method in 1934-35. As regards the production of sugar by *Khandsaris* we have no definite figures† but our estimate for the year 1934-35 is 175,000 tons.

The third method of making sugar is by refining it from Gur (raw sugar). Apart from about 13 Refineries throughout India, as many as 50 out of the modern cane-factories have got Gur refining plants, though only a few of them actually refine Gur due to the high cost of this double process of extracting Sugar from cane. The year 1933 was a peak year for the production of sugar from Gur, but the year 1934 has proved somewhat unfavourable for the gur-refining industry as will be seen from the following table.

TABLE No. VI.

*Production of Sugar and Molasses in India
by Gur Refineries.*

Particulars.	1933.	1934.
Number of Gur refineries operating ...	27	16
Gur or raw Sugar melted—Tons ...	1,51,269	1,07,263
Sugar manufactured „ ...	80,106	61,094
Molasses Obtained „ ...	56,239	39,770
Recovery of sugar per 100 tons Gur ...	52.95	56.90
Recovery of Molasses per 100 tons Gur ...	37.17	37.07

*For a detailed study in this connection see Author's Monograph on "The Indian Sugar industry—its Past, Present and Future."

It is regrettable that statistics of the production of sugar by indigenous processes (collectively called *Khandsaris*) are not available. The Imperial Council of Agricultural Research, happily realised the great importance of such statistics and sanctioned a grant in November 1933 for taking a census of Sugar produced by *Khandsaris*. The Government of U. P. and the Punjab have undertaken to collect these figures for their respective provinces, but evidently the work does not seem to have been completed as yet and hence in the absence of any data we have to depend on approximate estimates only.

We believe, however, that the production of sugar by *Khandsaris* decreased during 1931-35, as compared with 1933-34, due to various factors, including the imposition of the excise duty on *Khandsari* sugar, at the rate of Rs. 0-10-0 per cwt.

The increased competition from cane factories and the Excise duty on sugar alone with the unfavourable prices for Gur and the Sugar refined from it, have been responsible for a decrease in the output of sugar by this method and a larger proportion of factories not refining Gur during the year 1934. During the year 1934 *gur* prices were higher while sugar prices were lower, as compared with 1933. Only 8 out of 50 cane sugar factories which are at present equipped with plant for refining gur and 8 out of 13 refineries, making a total of 16, worked during the year 1934 as against 27 in the previous year. We hold the view, for reasons stated above, that Gur refining will decrease further and hence we have put our estimate of sugar production from this source for 1935 (which is to be added to the production of sugar during the cane-year 1934-35) at a still lower figure of 50,000 tons only. We estimate no increase in production of sugar refined from Gur, in Refineries during 1936.

8. Total Production of Sugar in India in 1934-35.

We will now turn to the statistics of production of sugar in India from all sources. The following table gives the total production of Sugar in India separately from all sources for the last 3 years and our estimates for the next season *i.e.*, 1935-36.

TABLE No. VII.

Total production of Sugar in India in Tons.

Year.	Direct from cane in Mo- dern fac- tories.	By indige- nous process— Khandsari.	Refined from Gur.	Total Sugar produced in India.
1932-33 ...	2,90,177	2,75,000	80,106	6,45,283
1933-34 ...	4,53,965	2,00,000	61,094	7,15,059
1934-35 (Est.)	5,80,000*	1,75,000	50,000	8,05,000
1935-36 (Est.)	7,00,000	1,75,000	50,000	9,25,000

*Our estimate is a little higher.

9. Consumption of Sugar in India.

Let us now consider the figures of consumption of sugar in India in relation to the production, and the problem of import of foreign sugar into India. In considering any questions relating to the Sugar Industry we ought to bear in mind that this industry is now the second largest Industry in India (the Cotton Textile Industry being the first) very largely owned, managed and controlled by the nationals of the country. Apart from that, the prosperity of over a million and a half of agriculturists is also bound up with the prosperity of the Industry. Considering these facts and also that the development of this industry has enabled the country to stop a huge annual drain of money (about Rs. 15 crores) to foreign countries by producing increasing quantities of Sugar within the country itself, the question of imports and a discussion of the ways and means to stop them altogether becomes a question of national importance, and not of immediate welfare to manufacturers only.

The annual consumption of Sugar in India has been estimated roughly to be about 9 lakhs tons for the year 1934-35 and one or two subsequent years. It must be remembered however, that the consumption of sugar in India has not been steady and varies from year to year according as the price of Sugar is high or low and according to the general economic conditions. (For detailed information *re*: "Price level and consumption of Sugar in India" *vide* Author's "Indian Sugar Industry—its Past, Present and Future"). However, even providing for all variations, it may be safely assumed that the consumption of sugar in India for the next one or two years will not vary much from the estimate given above.

From the figures of the total production of Sugar in India and the estimated annual consumption, we see that the time has now come when India will be absolutely self-sufficient (barring a small quantity of high class sugar required to cater to the tastes of a few fastidious people) as far as her supply of Sugar is concerned. What is more, we feel that during the next season *i.e.*, in 1935-36 a stage will be reached when we can produce sugar for export to other countries. We might state that even the existing

factories are capable of producing over 1,000,000 tons of sugar, if worked to their full capacity and for the full season.

The statistics given in Table No. VII indicate that in the next season India is expected to produce a few thousand tons of sugar more than is normally required for her consumption. It is a matter of great satisfaction that Indian Capital and enterprise have been able to develop the industry so rapidly within a period of three years, in spite of the world-depression. Such development of the industry has been of great benefit to a considerable number of cultivators who have increased their cultivation of cane under the impetus of the realisation of a fair return, the monetary yield from the cane-crop being considerably greater than the return from any other crop due to the fall in the prices of agricultural commodities.* Besides, the rapid growth of the Industry in the last 3 years is not only an ample proof of the fact, that given favourable conditions, India can build up her industries in the same manner as other countries have done, but it is also a complete vindication of the policy of protection.

10. The Problem of Imports of Sugar.

It is unfortunate, however, that just at the time when the Indian Sugar Industry is preparing to take its legitimate place in the national economy, it should be faced with a great danger in the shape of a systematic dumping at greatly reduced prices of sugar in this country from Java. It must be remembered that up to 1932-33, India used to import large quantities of sugar from abroad. Java was its principal supplier, but with the growth of the industry in India imports dwindled considerably and many mills had to close down in Java. Still, however, Java was unable to sell even her restricted output; they had also huge stocks accumulated there and she has been trying to unload these stocks

Mr. B. C. Burt, Expert Adviser to the Imperial Council of Agricultural Research, observed in the course of a paper submitted to the Royal Society of Arts, London, in May, 1935:—"During the present time of agricultural depression, the sugarcane crop has been the one redeeming feature in thousands of villages in Northern India. It is at all times a crop which gives the Indian cultivators a relatively large reward for his labour and gives him employment throughout the year. The growth of the sugar industry, whatever its imperfections, has added substantially to the cultivator's resources, whilst it is no exaggeration to say that the introduction of improved canes in Northern India has meant the difference between a cultivator's ability or non-ability to pay his rent or land revenue".

in the Indian market by a systematic policy of price cutting. Ordinarily, with the imposition of a heavy protective duty of Rs. 9-1-0 per cwt., the import of sugar would have automatically ceased, particularly on account of the availability of the requisite quantity of sugar produced in the country at reasonable prices but as we will see from the following table, Java was continually bringing down her prices, and she brought them down to an extent far lower than that visualized by the Tariff Board in their Report (1931)*.

TABLE No. VIII.

*C. I. F. Calcutta Price of White Java Sugar D. S.
25 and Over.*

Month. (1934)	Price per maund in Rupees. (Ex-duty 1931)		
	Rs.	As.	P.
January	3	6	1
February	3	6	1
March	3	5	1
April	3	5	1
May	3	1	3½
June	2	15	4½
July	3	0	9½
August	3	1	3½
September	3	0	4
October	2	10	1
November	2	6	1
December	2	6	3

N. B.—The prices on the West Coast Ports were still lower.

The result of this price-cutting was that Java Sugar has managed to bear the heavy import duty, and the imports of sugar from Java did not show any appreciable decrease during the current year, *i.e.*, 1934-35 as compared with the corresponding period of 1933-34. The import of sugar from Java (total import of sugar into India includes a small quantity from sources other

* Referring to price-cutting the Tariff Board observe in para 72 of their Report on the Sugar Industry. "It appears to us therefore that if Java Manufacturers desire to restrict the Indian Sugar Industry they may fix price even as low as Rs. 3-4-0 per maund ex-duty, Calcutta."

than Java which are not, however, very large) in the year 1933-34 was 1,94,426 tons as compared with 1,75,936 tons in 1934-35. The Government of India, themselves, according to their budget estimate for the year 1934-35 expected a total import of 1,10,000 tons in 1934-35, and to realise Rs. 2,05,00,000 from the import duty during 1934-35. It was then felt that the Government estimate was on the high side and that in view of the increased production of sugar in the country imports may not be high enough to yield so much revenue. Not only, however, was the expectation of the Government fulfilled but they have actually realised much more from this source, the total revenue realised from imports of sugar being Rs. 3,81,17,000 as against their estimate of only Rs. 2,05,00,000. While the Government may perhaps rejoice at this additional revenue out of regards for funds for their budget, the state of affairs clearly denotes the ineffectiveness of protection to the industry during the period. This is also borne out by the testimony of the Tariff Board, who based their recommendations for protection to the Industry on the basis of prices of Java sugar being Rs. 4 per md. ex-duty whereas we have seen that these prices came down to the remarkably low level of Rs. 2-6-3 per maund.

11. Duty of Government to maintain Protection.

It was evident that the well-being of the Indian Sugar Industry was seriously threatened by this menace of decreasing prices and increasing imports from Java during the last year. It was clearly the duty of the Government of India to take effective steps to afford necessary protection to the industry by providing for a sliding scale of import duty, with a view to guard against any further decline in prices of imported sugar in accordance with the situation envisaged by the Tariff Board* and provided for by the Government of India in the Sugar

* The Tariff Board also recommended (para 77) imposition of additional duty, *inter alia*, "If prices as a result of a policy of price cutting directed by any country against Indian manufacturers fall below the level of Rs. 4 without duty which we have assumed....." They also observed that "it should be possible to arrive at a conclusion merely on an examination of the import prices and without a reference to Tariff Board." They further emphasised that when the need for additional duty is established by an examination of prices prompt measures on the lines indicated by them should be taken by executive action.

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Industry (Protection) Act, 1932. Section 4 of the Sugar Industry (Protection) Act 1932 lays down as follows :—

“If the Governor-General-in-Council is satisfied, after such inquiry as he thinks fit, that sugar not manufactured in India is being imported into British India at such a price as is likely to render insufficient the benefits intended to be conferred upon the sugar industry by the duties imposed by section 2, he may, by notification in the *Gazette of India*, increase such duty to such extent as he thinks fit.”

The text of the Act has been printed in “The Indian Sugar Industry at a Glance.”

The Indian Sugar Mills Association brought this serious situation to the notice of the Government of India as long ago as November 1934 when a deputation on behalf of the industry waited upon the Hon'ble the Finance Member and the Hon'ble the Commerce Member of the Government of India at Delhi. The succeeding months and subsequent events have only proved the apprehensions of the Industry to be correct. At one time, particularly when Belgium broke away from the Gold Block, the possibility of Holland going off the gold standard was imminent and that would have given Java a further advantage over India in the matter of exchange. Though this possibility is now discounted in well-informed circles, the activities of “NIVAS”—the Semi-official Single Sugar Selling organisation of Java seem to be as strong or even stronger than before. The latest news regarding Java's inroad on the Indian market is really alarming. It is reported* that in January, 1935 the “NIVAS” has made forward sales of sugar to the extent of 4,50,000 tons most of which is for British India. Some idea of this sudden and startling increase in sales of Java sugar for India can be had from the fact that the sales reported in this one month were greater than the whole seasonal import of Java sugar in India for the last three consecutive years, viz., 1932-33, 1933-34, and 1934-35, the figures for these years being 295,118 ; 194,426 and 175,936 tons

* *Vide* International Sugar Journal (March 1935, page 87) ; also “Facts about sugar” (March, 1935, page 91.)

respectively.† Though this amazing phenomenon is credited to the reported failure of the sugar crop in the United Provinces, which led speculators in the commodity to hazard a chance, the fact nevertheless cannot be got over that even though this quantity of 4,50,000 tons alone sold in January may be distributed over a period of the next 12 months for actual imports into India, without any further additions to it throughout the year, which would seem improbable, the imports of Java sugar during the coming year may very much exceed the imports of 1934-35. This information if true, is indeed alarming, particularly in view of the fact that the production of sugar in India itself for the coming year is estimated to be equal to and indeed to be greater than her domestic consumption. Under these circumstances, if a huge quantity of sugar comes from Java or any other source it is sure to demoralise the market and administer a great blow to the indigenous sugar industry and consequently also to the large number of cultivators, if the Government of India do not come to the rescue and provide for a sliding scale of duty on imported sugar, to meet any emergency.

We would also invite the attention of the Government in this connection to the import of large quantities of sugar through the ports in Kathiawar as a result of the rebate in duty being given by several Indian States. The Government should take suitable action to ensure the stoppage of imports of sugar through these Ports by some method.

12. Theory of Consumers' Burden.

It is hardly necessary for us to deal at length with the theory occasionally being put forward by Government of protection constituting a burden on consumers, whenever they do not want to grant protection to an Industry. Fortunately for us this bogey of consumers' interests has been shown to be a fallacy in various countries of the world. This theory of burden on consumers as a result of protection is now completely exploded and the trend of

†The total import of sugar in India, in quantity and value, was as follows :—

		1932-33.	1933-34.	1934-35.
Quantity tons	...	4,01,741	2,63,712	2,23,347
Value Rs. ...	...	4,22,87,000	2,70,97,000	2,10,85,000
<i>Imports from Java only.</i>				
Quantity tons	...	2,05,118	1,04,426	1,75,830
Value Rs. ...	...	3,29,00,000	1,97,92,000	1,03,87,000

opinion even in countries which were erstwhile free-traders is to resort to a policy of protection for the preservation and development of national industries. It is generally recognised that there are no water-tight compartments like consumers and producers and it is incorrect to consider them as two separate classes of people having no identity of interests. A large number of consumers of sugar are also producers of cane, and it would be altogether wrong to state, even from a narrow point of view, that they are adversely affected by a policy of protection which has the effect of raising the price of sugar. The country as a whole benefits by a policy of protection. In the case of the sugar Industry, it must also be stated that the price of cane also goes up along with the price of Sugar. As the price of cane supplied to factories goes up, the price of cane supplied to *Gur* manufacturers also goes up. Consequently the price of *Gur* also goes up and this again helps the cultivator who manufactures *Gur*. The producer of cane *viz.* the ryot who is no less a consumer thus benefits directly from the policy of protection. We may also observe that the burden on consumers has been kept at a minimum due to the internal competition which has been brought into play and due to which there has been a great fall in the price of sugar since the date of the grant of protection to the Industry. As compared with the price of Sugar in 1933-34, the price of sugar during 1934-35 has been definitely lower. The price of Indian sugar is also lower as compared with the price of Java Sugar at the ports. The policy of protection instead of doing any harm to the consumer has enabled him to get sugar cheaper.* In addition, the

The Indian Sugar Mills Association in a representation submitted to the Government of India, Finance Department, New Delhi, on the 8th March, 1934, pointed out that the Industry was supplying India with sugar at a saving of Rs. 3,81,75,000 below the Java price and of Rs. 1,72,90,870 below the average price recommended by the Tariff Board. The following table will illustrate the price which the consumer would have to pay for (a) Java Sugar (b) for Indian Sugar at the average value recommended by the Tariff Board (Rs. 8-13-1) and (c) actually paid at present market rate : In each case Re. 1/- per md. has been added to factory or Port price for freight to consuming centres.

(a)	(b)	(c)
Java Sugar at Rs. 10/2/- per md. plus freight.	Tariff Board Recommendation at Rs. 8/13/1 plus freight.	Actual price in February 1934 at Rs. 7/12/- plus freight.
6,00,000 Tons.	6,00,000 Tons.	6,00,000 Tons.
Rs.	Rs.	Rs.
18,02,25,000	15,90,10,870	11,17,50,000

Since February, 1934, the price of Indian Sugar has fallen further (the amount of excise duty must be deducted from the actual price) and saving to the consumer has therefore increased.

country has derived great economic benefit owing to the cessation of huge drain of money to foreign countries, the employment it has given to hundreds of our young Graduates in Science and Chemistry, the higher prices realised by a large number of growers of cane and the additional employment created by the industry for a number of men of middle classes as also of the labouring classes. We wish that in appreciation of the benefits which have followed in the wake of development of this industry due largely to a policy of protection, the Government would not put forward any unconvincing argument about the burden on consumers as a consequence of the policy of protection, and continue to take an abiding interest in the welfare and prosperity of the industry, which will equally benefit the manufacturers, cultivators, consumers, and indirectly, even themselves by an increase in revenues, by various ways.

13. Legislative Enactments.

We may now turn to the legislation passed during 1934-35.

On 1st April, 1934, the Government of India imposed an Excise Duty* of Rs. 1-5-0 per cwt (roughly equivalent to about 0-15-4 per maund) on factory sugar produced in British India by the vacuum pan process (modern system) and 0-10-0 on that produced by the open pan process (indigenous or Khandsari system) in spite of unanimous and strong protests from all quarters. It is most regrettable that at a time when the industry has had to face such a severe cut-throat competition from outside and needed Government help to overcome it, the

The arguments advanced against the imposition of this duty and a detailed discussion of this topic will be found in Author's "The Indian Sugar Industry, Its Past, Present and Future".

The Sugar (Excise Duty) Act, 1934 will be found printed along with "The Indian Sugar Industry at a glance."

The Indian States have also been invited to impose an excise duty but there appears to be no compulsion, and these States can directly or indirectly give aid and encouragement to the development of the industry in their areas, by giving various facilities to factories to which the Government of India can take no objection *e.g.*, loans without interest, provision of free godowns, immunity from factory law, from income tax, and other taxes etc., particularly as the levy of such a heavy excise duty also helps the finances of these States.

Government should have placed a handicap in its way and made it easily vulnerable.

We urge the Government to take off this duty on internal production, or if that be not possible owing to exigencies of revenue, to reduce it to half the present rate. Even on principle, an excise duty is not sound, and is viewed with great disfavour by the public.

14. Fixation of Cane Prices in U. P. and Bihar.

In addition to the imposition of the Excise duty by the Central Government, the Governments of U. P. and Bihar also made Rules under the Sugar cane Act of 1934, regulating the purchase of sugar cane and fixing a minimum price to be paid for it. No other Province has passed cane-price fixing legislation. Though the motives which have actuated these Local Governments to enforce these rules *viz.*, the elimination of the middlemen from between the factory and the actual grower and the assurance of the minimum price reaching the latter, are praiseworthy, the experience of this one season has shown that there are various inherent difficulties, and it would take a long time before the rules can be found working smoothly. In both the provinces, the basic price of cane at 5 annas a maund is linked to the basic average of the highest price of sugar at a particular time on a f. o. r. factory calculation, at between Rs. 8 and Rs. 8-12-0 per maund (with a slight variation) with a provision for a sliding scale when the prices of sugar go higher or lower*. This has been viewed with disfavour by the manufacturers who have a definite feeling that this would work out very iniquitably and would greatly handicap the industry, particularly because there is now no realisation from molasses as was assumed by the Tariff Board, and the price realised for sugar is very low. But apart from this basic flaw in the fixation of a minimum price, the actual working of the rules has also shown other and equally great difficulties that have been created in the way of the Industry. As we have seen, the cane crop in certain areas in U. P. and Bihar was diseased and the quality of cane was very poor, yielding a smaller recovery of sugar. But factories had to pay for the cane at the same rate

*For details of variation in price, *vide* "The Indian Sugar Industry at a glance". The price to be paid by *Khandsaris* is also given therein.

irrespective of quality or face the only consequence of stopping crushing operations for want of supply of the raw material. Besides, the factories had to pay the same rate of cane both at the gate as also at other stations irrespective of distance from the factory. It is only reasonable that the factories should be allowed to deduct some amount of money to compensate them for the charges of transportation, loss of sucrose due to dryage etc., while bringing cane to the factories from a distance. If this concession is made, it will enable the factories to consume larger quantities of cane from the fields situated at a distance from the factories and this will be of benefit to the cultivators also. Some factories in Western U. P. had to close down actually for they found it very difficult to work with cane having very low sucrose content and for which they had to pay the same fixed price. The fixation of the price of cane without any regard to its quality and of one price throughout the Province without any allowance for local conditions has certainly been a great handicap to the Industry. It is, however, satisfactory to note that both the provincial governments have given assurances of considering further the question of the minimum price in the light of experience gained during the 1934-35 season.* That the Government also realised the flaws in the rules was evident from the fact that the U. P. Government issued a communique in March, 1935, allowing suitable reductions to be made from the minimum price of cane purchased from 2 particular Tahsils in the districts of Meerut and Muzaffarnagar in Western U. P. on account of the bad quality of cane in those areas. Let us hope that the lessons learnt in this season will not be lost on the Governments of U. P. and Bihar and Orissa and that they will give suitable relief to the industry by modifying the existing rules. It should be borne in mind that the interests of the cultivators are indissolubly connected with the interests of the manufacturers and that the success of the Industry depends upon the closest co-operation between the manufacturers and the

*The Government of U. P. called a Conference at Nainital from 16th to 18th May, 1935, of representatives of growers and manufacturers to consider the question of making suitable amendments to the U. P. Sugar cane Rules, 1934, in the light of the experience of the past season. It is expected that as a result of this Conference some modifications will be made in the Rules for the next season.

cultivators. While manufacturers on their part should not be unwilling to pay a proper price for the supply of their raw material *viz*, cane, as then alone the cultivators would grow suitable and richer varieties of cane which would give them a better recovery and large number of days for crushing, the Government ought also not to create conditions in which the manufacturers' interests are not properly preserved, as that is sure to affect adversely the agriculturists also.

15. Profits made by the Industry.

It will be of interest here to examine balance sheets of a few sugar companies in order to know whether the margin of profits they are making is really so abnormally great as to justify the imposition of a heavy excise duty at such an early stage of the development of the Industry. The table given below will enable the reader to find out for himself the extent of the profit made by the industry and to appraise the situation in its proper perspective.

An examination of the balance sheets will show that at present there is nothing like profiteering, and that the profits from the industry have been dwindling.

We might also observe that some factories in the Western U. P. have also had to work during the last year at a loss, owing to disease in cane and abnormally low recovery of sugar.

TABLE No. IX.

Balance Sheets of Sugar Companies.

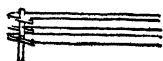
Name	Paid up Capital.	Block.	Dividend			Return of dividend percentage on Block 1933—or 1934.
			1932	1933	1934	
	Rs.					
1. Basti Sugar Mills ...	12,00,000	24,34,735	80	25	25	12
2. Carew & Co. (Sugar)	10,00,000	14,81,722	12½	15	12	13
3. Cawnpore Sugar Co.	15,00,000	31,37,971	35	30	30	15
4. Punjab Sugar Mills...	12,00,000	10,36,155	40	40	...	...

TABLE No. IX—*contd.*

Name.	Paid up Capital.	Block.	Dividend.			Return of dividend percentage on Block 1933—or 1934.
			1932.	1933.	1934.	
	Rs.					
5. New Savan Sugar & Gur Refining Co.	11,00,000	20,33,082	15	12½	10	5·4
6. Balrampur Sugar Co	17,00,000	14 15,950	...	...	10	12
7. Ryam Sugar Co. ...	4,00,000	7,10,609	30	30	15	8·4
8. Samastipur Central	11,99,000	11,48,779	10	12½	...	...
9. Belapur Co., Ltd. (1933)	18,79,900	17,12,000	12	18	20	...
10. Hindustan Sugar Mills.	5 00,000	12,30,748	...	10	...	...
11. New Swadeshi Sugar Mills ...	7,25,000	11,50,663	...	8	6	...
12. Oudh Sugar Mills ...	10,00,000	15,39,777	...	...	7	...
13. E. I. Distilleries etc.	(£) 82,000	3,71,435	10	10	...	...
14. Ishwari Khetan ...	10,50 000	7,06,010	30	30	...	...
15. Padrauna Rajkrishna	14,36,500	16,04,052	40	20	...	...
16. U. P. Co-operative Sugar Factory.	2,96,697	5,60 504 (1934)	...	...	6	...
17. Mysore Sugar Co. ...	20,00,000	16 80,155	...	...	10	...
18. Deccan Sugar & Abkari	15,30 000	10,88,482	...	10	7	...
19. Champaran Sugar Co.	12,00,000	29,98,686	...	15	25	5
20. Ganesh Sugar Mills...	8,00,000	9,64,200	...	...	10	...
21. Upper Ganges Sugar Mills ...	6,00,000	12,60,461	...	...	...	...
22. Purnabpore Sugar Co.	15,00,000	17,69,752	...	10	10	7½
23. Harinagar Sugar Mills	10,00,000	15,00,000	...	...	6½	4½

16. Total consumption of Sugar including Gur (Raw Sugar) in India.

Before we close this first part and pass on to another dealing with the many problems that face the industry, and the progress



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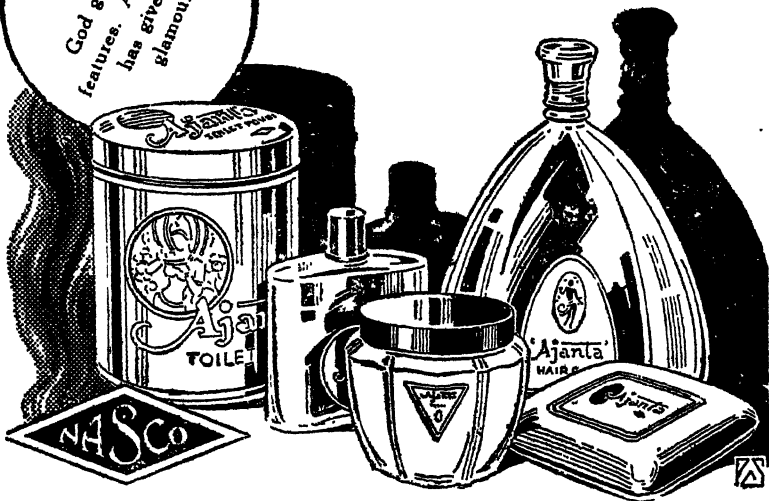
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made with regard to them in the last year, we wish to refer to one more question here, *viz.*, the total consumption of sugar including *Gur* in India. Elsewhere, we have dealt with the consumption of refined Sugar but not of all Sugar in India. Apart from this quantity of about 9 lac tons of refined sugar, India consumes a very large quantity of *Gur* annually. The total annual production of *Gur* all of which is consumed in the country is between 2½ and 3 Million tons.* It should not be forgotten that India's population is largely rural and *Gur* has been used as a sweetening agent and an article of diet by the villagers for several generations. It is also used on ceremonial and auspicious occasions not only in villages but even by the town-population. It has a nice flavour, and delicious taste. A perusal of the table given below will show that the consumption of *Gur* in 1932-33 was almost 4 times the consumption of refined Sugar in India. The production of *Gur* for 1934-35 estimated at 3,250,000 tons in India. The consumption of *Gur* is on the increase. We have already seen before that about 67% of the total cane crop in 1934-35 is estimated to have been utilised for the manufacture of *Gur*.

TABLE No. X.

Per capita Consumption of Sugar and Gur in India.

			Consumption in India in lbs. <i>per capita.</i>		
year.			Sugar.	Gur.	Sugar & Gur.
1930-31	...	...	7·8	14·4	22·2
1931-32	...	...	6·0	17·6	23·6
1932-33	...	...	5·8	20·4	26·2

*It is not generally realised that India is the largest sugar producing country in the world, since 1931, up to when Cuba was leading. The yields of Raw Sugar (*Gur*) in India was 50,67,000 tons in 1933-34 (the estimated production of *Gur* for direct consumption alone being 30,00,000 tons in 1933-34).

For figures of production of *Gur* for last few years, see Author's "Indian Sugar Industry,—Its past, present and future" pp. 386 (1934).

Though the main subject of our study in this book is the problem of refined Sugar, we should not forget that it represents only one-fifth or one-fourth of the total consumption of Sugar (*Gur* as well as sugar) in India. But the reason why we have to discuss the former in such great detail and to make only a passing reference to the question of *Gur* is that whereas the former is really a "problem" on account of many complex economic factors and even international questions being involved in a study of it, the latter, *viz.*, *Gur* does not constitute a "problem" at all (*e.g.*, for one thing, there is no import of *Gur* from outside, and hence there is no competition). Though the quantity of *Gur* produced in India is nearly five times bigger than refined Sugar, the method of production of this enormous quantity is very primitive. *Gur* is manufactured in small quantities and is essentially a cottage industry.* It requires no elaborate and complex financing or marketing. Indeed, the continuance of the production and consumption of *Gur* in India in such large quantities even in the face of all the latest and most modern methods of Sugar refining is a remarkable feature which one may do well to note and to ponder over.

We are glad to note that the All-India Village Industries Association was established by the Indian National Congress under the guidance of Mahatma Gandhi in November 1934, particularly on account of the propaganda which that Association has undertaken for the popularisation of *Gur*. The Association undertook this task not only on purely economic grounds of promoting a cottage industry but also because it was satisfied about the superior nutritive value of *Gur*. Mahatma Gandhi in the course of an editorial in the "Harijan" dated 13th April, 1935 observed :—

"Most undoubtedly people will be advised to use *Gur* for their milk and tea. They will be told, as they are being told, that it is superstition to think that *Gur* taken in milk or tea is injurious to health. One correspondent says that on his wife beginning to take *Gur* with her tea instead of sugar she lost her constipation. I am not surprised, because *Gur* has a mild laxative effect which sugar certainly has not."

**Gur* is also manufactured from palm-juice. There is a great possibility of development of this cottage industry in Bengal.

In another issue of the "Harijan" dated 20th April, 1935 Lt. Col. Sunshere Singh writes about the properties of *Gur* :—

"*Gur* has got the following average composition :

Sucrose	...	...	...	63%
Fructose	...	...	...	19%
Insoluble matter	...	...	...	3%
Moisture	...	...	...	12%
Salts	...	...	...	3%

Sucrose is assimilated in the system only after it has been inverted into fructose. On the other hand fructose is directly assimilated into glycogen. It is, therefore, clear that refined cane-sugar, which contains no fructose would take longer to be assimilated than *Gur*. Therefore, the nutritive value of *Gur* is about 30% superior to that of refined sugar.

The above note is self-explanatory as showing the superior nutritive value of *Gur* over refined Sugar. The word sucrose above is in fact cane-sugar or refined sugar, *i.e.* the *Saccharum Purificatum* of the British Materia Medica.

The above composition of *Gur* was furnished to me by the Public Health authorities and is interesting enough in itself for me to pass on."

Indeed it cannot be disputed that *Gur* is a wholesome article of diet. It has been on the daily menu of millions of our countrymen since generations. As the various properties of *Gur* are now being brought to the notice of the people, it is expected that the consumption of *Gur* in India will show an increase. But a warning here perhaps will not be out of place. Unfortunately, the production of *Gur* as is carried on now is wasteful in many respects, and it will be better in the national interest if suitable improvements were introduced in the manufacturing process of *Gur*, for minimising the waste of raw material, increasing the extraction of sucrose etc*. We hope the All-India Village Industries Association will tackle this problem thoroughly.

* *Vide* Author's "The Indian Sugar Industry. Its Past Present & Future".

PART II.

Problems before the Industry and the future prospects of the Industry.

17. Problems facing the Industry.

The industry has now reached a stage when it must address itself seriously to the task of solving many urgent problems which have arisen as a result of its speedy development and which have been detailed elsewhere. It must also try and consolidate its position by attaining a high level of efficiency all-round. The prosperity of the Industry will depend considerably on the success it achieves in tackling these multiple problems.

The season under review *i.e.* 1934-35 has been unfortunate for the industry in several respects. The low price of Sugar combined with the imposition of excise duty and other factors enumerated in the previous pages have affected the profits of all factories. Their effect has been more severe still on new factories which had no previous experience and which had not had the opportunity of accumulating any reserves. In many districts, the concentration of factories in certain areas was responsible for creating conditions in which it was difficult for all to get requisite supplies of cane throughout the season.

The situation was made more difficult by other circumstances over which the Industry had no control. In the Punjab, and the western United Provinces, the crop suffered severely from the effect of frost, and from an attack of *pyrilla*, in some cases amounting to disaster. In Bihar and the Eastern United Provinces the extent of the damage done by the depredations of the "Moth-Borer" has also been considerable and widespread. Finally, the agricultural operations in the East of Gundak were disturbed by the Earthquake, the effects of which were plainly visible in diminished supplies of cane.

We will now refer to the various problems confronting the industry and start with the most important one *viz.*, of sugar-cane.

18. Sugarcane—Necessity of Improvement in Cultivation.

The conditions of Sugar production in India are peculiar and find no parallel elsewhere. Here, the manufacturers generally do

not produce the raw-material as they do in Java and other countries from their own extensive plantations round about the factory, but they depend on a vast number of small holders independent of each other and of any system, industrious but lacking in Capital and resources, and because of this handicap combined with their illiteracy, incapable in the absence of guidance, of making use of the latest developments of agricultural research. We must remember this fact throughout the discussions of the problem of Sugar-cane and agricultural improvement.

We have already seen above how the Sugarcane crop in portions of the Punjab, the U. P., and the Bihar was attacked by diseases and yielded a very low recovery. Whether it be 'Pyrilla', Leaf-hopper, 'Red Rot' or 'Moth Borer', the existence of these pests together with the low recovery leads to the inevitable conclusion that all is not well with our cane-crop and unless immediate measures are adopted to study the whole question and devise suitable remedies, the sugar industry may suffer a great set-back in the future. We know full well that as regards the yield of cane per acre, its sucrose content or average percentage of recovery of Sugar from cane, we are still far behind the other Sugar producing countries like Java, Cuba, Hawaii and the Phillipines. The first *viz.* Java is our formidable competitor in the field and unless we devise prompt measures to improve the situation, it would be difficult for us to withstand the forces of economic competition. Due to plantation of cane without rotation of crop, extended ratooning, absence of manure, lack of supply of water, bad and unsound seeds, etc., the cane crop is poor both in yield and quality. As a consequence, the cost of production of cane is also high. In addition to these causes incalculable harm is done by outbreaks of insect-damage, as recently occurred in Western U. P. due to the leaf-hopper, and the infestation of the cane crop in Bihar and in Eastern U. P. due to the moth-borer.*

*A study of an article on "The Chief Insect pests of sugarcane and methods for their control" by P. V. Isaac, B.A., M.Sc., D.I.C., offg. Imperial Entomologist, Pusa and C. S. Misra, which appeared in July 1933 issue (Vol. III, Part IV) of "Agriculture Live-stock in India," a bi-monthly journal issued under the authority of the Imperial Council of Agricultural Research, will be both instructive and useful in this connection.

The latter being an immediate and direct source of danger requires urgent handling and owing to the enormity of the task and the cultivation being in the hands of small holders, it is only the Government who could tackle this problem successfully. The factories would do well to make use of every opportunity to bring the facts to the notice of the authorities of the Agricultural Department in each Province who should in the interests of all concerned take immediate steps to investigate this problem of pests.

But apart from this immediate and important task of investigating the problem of pests, there is a greater necessity of undertaking other measures which would bring home to the cultivator the necessity and desirability of making improvements in the conditions of cultivation of cane. The average cultivator is not aware of the latest improved methods of farming and manuring, and left to himself he simply carries on the process from year to year without worrying about any improvement in quality or quantity of the output. The sugarcane crop is one of the principal crops of this country and the prosperity of one of the largest industries of this country is linked with it. It is therefore the duty of the Government to devise means of imparting better knowledge about his crop to the cultivator and making available to him the fruits of organised research. Though it is satisfactory to note the work done in this connection by the Sugar cane Research Station at Coimbatore which has brought out certain improved varieties of canes which are now extensively in use in U. P. & Behar, we think the time has now arrived to redouble our efforts to establish more intimate contact with the peasant-cultivator and initiate him into methods of better farming by actual demonstration. It is necessary for this purpose to establish a series of demonstration farms and nurseries in all cane-growing Provinces which would devote their energies to the propagation of canes of high sucrose content and of early and late ripening varieties which will be very helpful to the industry in extending their crushing season and thus reducing their costs of production. These demonstration farms and nurseries should also serve as centres from where trained agriculturists would tour round the surrounding districts, where best methods of cultivation and manuring suitable for Indian conditions

would be demonstrated and made accessible to small holders and whence the distribution of sound disease-free seed could be undertaken. One important function of these farms would be to carry on researches as to the methods of combating cane-diseases and pests. Besides the establishment of such farms, it is also necessary for the Government to undertake such allied work of all-round improvement as provision of better facilities of irrigation by extension of the canal system and assistance in tapping the subterranean sources of water supply. It is the duty of the Government to undertake all these measures. It is equally the duty of the factory owners to take an active part in this work and render all possible assistance and help to the Government. For such an enormous scheme of development could only be got through with the co-operation of all concerned *viz.*, the Government, the Manufacturer, the Zamindar and the Cultivator. It is satisfactory to note that the Indian Sugar Mills Association has already appealed to its members in this connection and is trying to evolve a comprehensive scheme of agricultural improvement. The Federation of Indian Chambers of Commerce and Industry also passed a comprehensive resolution* at its last Annual Meeting held at Delhi in March, 1935, recommending strongly to the Government of India, the Imperial Council of Agricultural Research and the Provincial Governments

"The Government of India having imposed an Excise Duty of Rs. 1-5 per cwt. on sugar manufactured by factories operating by the vacuum pan process, this Federation is of the opinion that more rapid and intensive steps should be taken by the Central Government through the Imperial Council of Agricultural Research and by the Provincial Governments, to raise the standard of cultivation of cane, both as to quality and quantity, by the establishment of cane nurseries in all cane growing provinces in which canes of high sucrose content and early and late ripening varieties would be propagated for wide distribution to the ryots for seed, by the dissemination of information as to best methods of cultivation, manuring and irrigation by the extension of the canal system or assistance in well-sinking, by research as to methods of combating cane diseases and pests, and by the provision of better roads so that cane cultivation costs may decrease and production increase, for the benefit of the ryot and the sugar manufacturer enabling the industry to compete effectively with foreign countries before the period of protection to the Industry expires. The Federation considers that a fixed percentage should be allotted annually for these purposes out of the proceeds of the Excise Duty on Sugar."

the undertaking of measures to raise the standard of cultivation of cane, in respect of quality as well as quantity. In this connection, it will be of interest to note that, as announced by Sir George Schuster in his Budget Speech last year while proposing the levy of an Excise Duty on Sugar, a portion of the duty, equivalent to one anna per cwt., is being set aside by the Government of India to serve as a fund which will be distributed among the Provinces where white sugar is produced, for the purpose of assisting the organisation and operation of Co-operative Societies among the cane growers, so as to help them in securing fair prices, or for other purposes directed to the same end. The Share of U. P. and Bihar from this fund is expected to amount to Rs. 3,68,000 and Rs. 2,38,000 respectively during 1934-35. It is understood that the Government of U. P. has already drawn out a scheme with the primary object of effecting improvements in the cultivation of cane on which the grant made by the Government of India out of the sugar excise revenue will be spent. Marketing of cane on co-operative lines, however is said to form an important part of this scheme. We are also informed that the Department of Co-operative Societies, Bihar and Orissa, is working out a scheme for the improvement of sugar cultivation in Bihar on similar lines, though the scheme does not seem to have been finalised as yet. Moreover, apart from these sums, which the Provincial Governments are to receive from the proceeds of sugar excise duty, they will also get considerable sums (about Rs. 19 and 17 lakhs respectively for U. P. and Bihar), from the Government of India out of the sum of Rs. 1 crore set aside in 1934-35 Budget for distribution among the Provincial Governments for rural development schemes. It is confidently hoped that at least the cane-growing Provinces will see their way to utilise a bulk of this grant together with the share of the proceeds of sugar excise duty in improving the cane-crop of their Provinces. There is no doubt that the schemes above referred to *i.e.*, of assisting the organisation and operation of co-operative societies in U. P. and Bihar will improve considerably the position of the cultivators but it may be pointed out that these schemes seem to omit one practical, concrete and essential manner of improvement in the cultivation of cane and, consequently, of the position of the cultivator *viz.* the establishment of demonstration

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farms and cane nurseries. We hope that the Governments of those Provinces in which the sugar Industry occupies such an unique position will evolve really comprehensive schemes for improvement of cane-cultivation and spend liberally on them. Such expenditure will result in considerable benefit to the cultivators, ameliorate their condition, and be of assistance to manufacturers also.

While on this subject we must note with regret that the Sugar Committee of the Imperial Council of Agricultural Research, a body pre-eminently fitted to deal with all questions of improvement of cane-crop etc., did not meet for over a year and a half, since their meeting at Coimbatore in November 1933. A meeting was however, held recently in July, 1935, at Simla. We earnestly hope that the Imperial Council of Agricultural Research which has all along been helping the Industry to grow, will take up seriously the question of improvement in Sugarcane crop cultivation independently as well as through the Sugar Committee, spend liberally in this direction and guide research work. The importance of Research work can never be exaggerated especially in an industry like Sugar which bristles with so many problems. In Java, Hawaii and Cuba etc., research is being continuously carried on for decreasing cost of production, increasing yield of cane per acre, improving of quality of cane, etc. The Government and the industry should take a keen interest in the matter and earmark some expenditure annually on a scheme of research. It will be of great benefit and assistance to the industry and the country. We would also suggest that problems for fundamental and specialised research can be advantageously distributed among University Departments, Scientific Institutes, where facilities for research exist, by making grants to their revenues. We hope the question of the establishment of a well-equipped Research station will also receive the attention it deserves.

19. Better facilities of Cane-transport.

While discussing the problem of raw-material we have also to consider the question of the facilities of communication. The factories particularly in the U. P. and Bihar are situated very close to one another, and this being so, many of them are unable to obtain their supplies of the requisite quantity of cane from the

surrounding neighbourhood with the result that all of them have to get their supplies from long distances. To facilitate the movement of cane and to make it quicker to prevent dryage and consequent loss of sucrose content, it is necessary to improve roads and the methods of transport in rural areas. It is understood that on the recommendation of the Indian Roads and Transport Development Association Ltd., the Government of India have made a suggestion to the Local Governments to raise loans for road development schemes. We hope that a part of these funds, when raised, would be used for the development of feeder and other roads in the rural areas which will help considerably the movement of all agricultural commodities.

It would also be helpful if tramway lines would be laid in suitable areas for transport of cane. Here again co-operation between the industry and the Government is essential. We learn with satisfaction that in some areas in U. P. the Government have rendered assistance for laying tramway lines on suitable terms. We hope such facility will be made available in other areas also.

20. Organisation of cane-supply.

Before passing on from the problem of the supply of raw material to the factories we must mention here one other matter which requires attention. It is, however, a matter which concerns the manufacturing side only and is for the factories themselves to settle. Following on the remarkably rapid extension of the industry, an ill-advised congestion of factories has resulted in certain areas in the U. P. and Bihar. The result of this congestion has been that every season we have to witness a severe competition among factories for obtaining cane-supplies, which in its turn results in unnecessary costs of collection. We are aware that, although it is very desirable, it is impossible for most factories in India to have their own plantation. It is still possible for factories in different areas to devise means by mutual agreement whereby they could organise their cane-supplies on more scientific lines keeping in view the elimination of criss-crossing the traffic. This would not only help them to get over the ugly feature of facing unpleasant and wasteful competition among themselves, but also to reduce their cost of collection and consequently the cost of production to some extent.

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21. Problem of Molasses.

From a study of the raw-material, we now come to the problem of by-products which is perhaps the most important of the problems which the industry has to tackle. Molasses and Bagasse are the two chief by-products of the Sugar Industry and what a serious problem they present can be imagined from the fact that whereas only a few years ago when the Tariff Board made its report on the Sugar Industry, it calculated the price of molasses at Rs. 1/8/- per md., to-day they not only do not fetch any price but their disposal has become a problem for the Industry. Even throwing off the molasses means some expenditure. Besides, it creates nuisance in the neighbouring areas owing to its offensive smell etc., and may lead to prosecution. This does not mean that molasses as a substance has no use, for there are numerous profitable uses to which molasses could be put,* including manuring and cattle-feeding. But this fall in price has been due partly to the sudden increase in production of molasses and partly to the lack of any organised effort on the part either of the Government or the factories to utilise molasses in other ways. The production of molasses in India is shown below. The import of molasses is now negligible.

TABLE No. X.

Production of Molasses in India.

—		In Cane Factories.	Total (including Khandsari & Gur Refineries).	Import of Molasses.
		Tons.	Tons.	Tons.
1932-33	...	130,419	330,000	31,991
1933-34	...	190,384	390,000	2,401
1934-35 (Est)	...	240,000	440,000	415
1935-36 (Est)	...	300,000	500,000	.....

* For a detailed study of this problem of utilisation and disposal of by-products see—Author's "Indian Sugar Industry—its Past, Present and Future" and "Research in Sugar Problems and Utilisation of By-products."

One important use to which molasses could be put is the production of alcohol, but this industry can succeed only if Government agrees to make it compulsory for petrol to be sold only with a certain admixture of alcohol as has been done by several countries*. It is regrettable that inspite of repeated requests on behalf of the industry the Government have given no heed to this proposal. A Sub-Committee of the Sugar Committee of the Imperial Council of Agricultural Research recommended in 1933 that the Imperial Council should carry out a commercial experiment for use of power alcohol in limited areas. It was also suggested that one plant should be put up at Cawnpore and other at Amritsar. It is a matter of regret however to note that no action has been taken in regard to this matter till now. In a paper read before the Academy of Sciences U. P., recently Dr. N. R. Dhar and Mr. S. K. Mukherji described the beneficial effect of molasses on soil fertility as a result of the researches they have been carrying on. But there are difficulties here due to the inherent conservatism and ignorance of the agriculturists who look with disfavour on the introduction of new methods and do not take kindly to it, unless properly persuaded about the beneficial effect thereof.

We learn, however, that the Indian Molasses company of Calcutta is making arrangements to buy molasses from factories and export them in bulk to the United Kingdom to be used as manure and as cattle food. We also understand that they are constructing a number of huge underground tanks at different points where the output of the Season will be stored and then gradually exported to England. The undertaking seems to have the support of the Railway companies who are also reported to have consented to give facilities in freight etc. The Calcutta Port Authorities also have reduced their charges on molasses to be

*In Mysore, a plant has been erected, suitable to tropical climate, for manufacture of rectified spirit over 98 O. P. with provision for absolute alcohol, of between 99.8 and 99.9 purity by the *melle* process. The cost of production of alcohol is reported to be 0.46 per gallon, with molasses @ as. 1 per maund and 0.2-0 per gallon, with no value for molasses.

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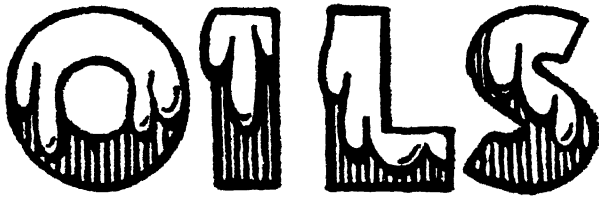
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Molasses exported in bulk will also be exempt from the surcharge of 12½% River Due. Thus, although no progress has been made in our country for finding out some outlet for the increasing production of molasses, this venture of the export of molasses in bulk, if it materialises is expected to be a source of some relief to the Sugar Industry, in as much as it will bring some return for the same.

It is unfortunate that industrialists in this country have completely ignored a very important branch of their activity *viz.*, establishment of an efficient research department at each factory, with the result that by-products of their industries are a burden and a problem for them and a waste for the nation. The sooner the Industrialists realise the necessity of providing for adequate researches in the various problems connected with their particular industry, the better for them, and the country. It is on the successful carrying out of such researches that a great deal of the success of the Sugar Industry depends. The potentiality of exporting sugar would depend still more on the success achieved in this direction, as then alone would it be possible to bring down the cost of production to a level which can compare with countries like Java, Cuba, Philippines and Hawaii Islands.

22. Bagasse.

The residue of fibrous matter which remains after the cane is crushed, is another important by-product which could be put to considerable use. At present a large part of this material is used up as fuel but apparently it is so costly as a fuel that it has led a writer to remark that it would be as good to burn the Sugar. It would indeed be a source of considerable gain to the Industry if other economical and commercial uses of bagasse could be explored. The use of bagasse for the manufacture of packing paper and boards has been discussed in detail in "The Indian

Sugar Industry—Its Past, Present and Future, page 139.” Besides, other commercial uses may be found out if proper researches are carried on.

23. The Problem of Marketing.

Another great problem before the Industry is the problem of marketing. As we have seen above, the annual production of Sugar in India is now almost equal to the estimated annual consumption and will be even more in the coming years. But we have also seen that most of the Sugar, more than 80% of the total production is produced in the two provinces of U. P. and Bihar, thus necessitating the transport of Sugar over long distances. The following table gives the calculated annual requirements of sugar in the various Provinces.

TABLE No. XI.

*Calculated requirements of sugar in the various
Provinces—1934-35.*

				Tons.
Bihar and Orissa & States.	...	...	...	105,000
United Provinces & States	...	...	...	125,000
Punjab, States & Kashmir	...	...	...	80,000
Madras, States & Hyderabad	...	...	...	165,000
Bombay, States & W. I. States & Mysore	...	...	...	95,000
Burma	...	...	...	35,000
Bengal	...	...	...	130,000
Assam, C. P., N. W. F. P., C. I., States, etc.	...	...	...	165,000
Total for India	...	...	...	900,000

When these figures are compared with the figures of production given elsewhere, it will be seen that the areas of production are different from the areas of consumption. While the two adjoining Provinces of U. P. & Bihar form the chief sugar producing tracts in India, the largest consuming markets are on and near the sea-board. Before the growth of the Sugar Industry in India, these areas together with all others used to be supplied with sugar mainly by import from abroad. With the

rapid increase in the indigenous production, consumption of Java Sugar in inland markets has gone down. Now it has become necessary to oust foreign sugar altogether from the Indian market, and for that purpose it is essential to send Indian sugar even at Ports and in areas adjacent to them, where the consumption is large. It may even be necessary for Indian Sugar to be sold at a small loss in port areas, to oust the menace of foreign sugar.

24. The Indian Sugar Marketing Board.

With this end in view and in order to tackle the problems of marketing of Indian Sugar scientifically, large and representative meetings of Sugar Factory owners took place at Calcutta and Cawnpore on the 7th and 26th August 1934 respectively. The problem of marketing Indian Sugar was discussed and it was decided to bring into existence a Central Marketing Board for sale of sugar with a view (1) to avoid internal wasteful and unrestrained competition by a scientific distribution of sugar in a manner which would avoid overlapping and would eliminate loss in freight by a well-planned scheme of distribution of sugar from various producing centres to the adjacent consuming markets, and (2) to eliminate imports of foreign sugar as far as possible with a view to keep the Indian Market for the sugar manufactured in India. It was then proposed that the Central Marketing Board should take roughly 30% of the production of sugar in the various factories in U. P., Bihar and Bengal, and to send requisite quantities to distant port markets for sale in competition with the price of imported Sugar. The hope was also expressed that if this scheme was found successful, the Central Marketing Board could at a later date undertake the sale of all sugar manufactured in India. The ultimate aim is to prevent imports of foreign sugar in the Indian market, to reserve as far as possible the Indian market for sugar manufactured in India, and to arrange distribution inside the country in a scientific and economic manner. The preliminaries for establishment of this Central Marketing Organisation are now over and an Indian Sugar Marketing Board has been formed. It did not start functioning during the last season owing, *inter alia*, partly to the large amount of spade-work being necessary in order to launch such a big and new venture and partly to the absence of support of 75% of the manufacturers.

Personally, we are not very sanguine about the possibility of this Central Marketing Board beginning to function in the near future, owing, *inter alia*, to the absence of a strong desire among manufacturers for sales of sugar through a common organisation. But we trust that as soon as the utility of having a Central Organisation for sales is realised and the requisite measure of support from manufacturers is forthcoming, the nucleus of the Central Marketing Board which is ready, will be made use of by the Industry. It will be possible for the industry to launch such an organisation into existence almost immediately after they decide to do so, due to the machinery being ready.

One of the difficulties in the way of establishment and working of the Central Marketing Organisation was the absence of uniformity in quality and of fixed standards of sugar to which the quality could be related. It is satisfactory to note, however, that this question also engaged the attention of the mill-owners who entrusted this work to special committee appointed to work under the guidance of Mr R. C. Srivastava, Sugar Technologist to the Imperial Council of Agricultural Research and a list of Indian sugar standards was prepared by a special committee. The finalising of the standards is now receiving the attention of the Bureau of Sugar Standards, a body created under the authority of the Imperial Council of Agricultural Research with the Sugar Technologist as Chairman. We hope that when standards are finally fixed, mills will produce and sell sugar according to particular fixed standards, and also endeavour steadily to improve the quality of sugar. It need hardly be stated that the production of uniform quality of sugar is an essential preliminary to any collective scheme of marketing and is very beneficial to the industry as well as the dealers in sugar. Sample sets of various standards of sugar, are also under preparation by the Bureau of Sugar Standards, and we hope that before long the factories will be able to get sets of the samples of various standards of sugar for their guidance.

25. The Transport Problem.

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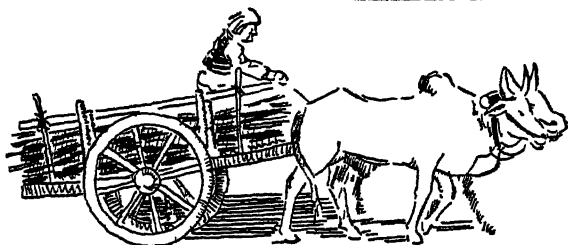
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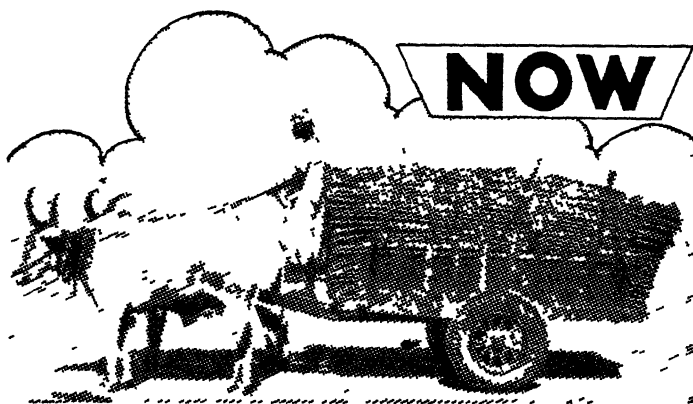
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and Steamship Companies and other transport agencies, in the shape of reduced freights and port charges, increased facilities re : supply of wagons etc., on sugar particularly to long distances. Such co-operation will not only benefit the industry but also the transport agencies by increased and permanent traffic. This question was taken up by Mr. D. P. Khaitan on behalf of the Indian Sugar Mills Association with the Railways and the Steamship Companies. It is gratifying to note that as a result thereof, the railways realised the immediate necessity of reducing the freight to the ports for the mutual benefit of the industry and the railways and during the year under review the railway companies reduced the freights from factories in the U. P. and Bihar from Rs. 1/4/- per maund on the average to Re. 1/- per maund on the average for sugar booked to Karachi, Bombay, Vizagapatam, Madras and Coconada*. It is very interesting to note how both the railways and the factories have benefited by this reduction. The railways would reasonably expect to get an additional traffic of about 50 lakhs maunds of sugar yielding to them an increase in revenue of about Rs. 50 lakhs per year. On the other hand the industry has gained to the extent of about as. -/4/- per maund, which, based on an estimated production of 5 lakhs tons in U. P. and Bihar gives a saving to the industry in those provinces of over Rs. 30 lakhs per year. Although it must be owned that several railways have offered considerable facilities by revising their rates policy, much still remains to be done in this direction. The North Western Railway have yet to accept the lead given by various other railways for the benefit of factories situated on their line. The railway freights admittedly play a very important part in the development of industries in a country and the railways while not ignoring their own interest should do the needful in implementing the policy adopted by the Government in connection with the country's industrial development. In this particular case, it is absolutely desirable that the railways should further reduce the general basis of the freight charge to the various ports

*It is gratifying to note the reduction made by the B. & N. W. and the E. I. Railways of about 2 annas per maund in freight of sugar to Howrah, with effect from July, 1935, from a large number of stations on the B. & N. W. Railway. Some of them are in Bihar, and some in U. P. The average freight to Howrah is about 0-13-0, varying with the distance of each station.

e.g., Bombay, Karachi, Madras, Coconada, Vizagapatam and Calcutta, from the factories in U. P. and Bihar and fix it for all ports at a flat rate of 0-13 0 per maund which is equivalent to the average amount of freight paid on sugar conveyed by rail into Calcutta (the prices of imported sugar at various ports being nearly the same). This will mean an additional revenue for the railways also, besides benefiting the industry and the country at large. It was estimated by the Indian Sugar Marketing Board that about 50,00,000 maunds (about 1,65,000 tons) of sugar could be sold at the various ports during a year and the freight on this quantity would work out to about Rs. 41 lakhs at -/13/- per maund.

It should be remembered that the river Ganges with its tributaries offers an alternative water route for sugar from factories to Calcutta and thence by Steamships to the various Ports in India and it is a matter of satisfaction that the India General Navigation and Rly. Co. Ltd. has quoted in collaboration with the Conference Lines in India comprising the British India Steam Navigation Co. Ltd., Turner Morrison & Co. Ltd. and the Scindia Steam Navigation Co. Ltd., special flat rates for Sugar booked from inland Riverine Steamer Ghats to all Indian Ports *via* Howrah including Karachi, which range from between 0-8-8 and 0-10-6 per md. to Ports north of Madras including Rangoon and Akyah, to between 0-9-8 and 0-11-6 per md. for all Ports between Madras and Karachi both inclusive. The Calcutta Port Commissioners have also reduced the port charges on the export of sugar from Rs. 2-4-0 per ton to Rs. 1-2-0 per ton. *i.e.*, about 8 pice per md. with effect from 1st January 1935, so far as sugar going beyond Calcutta by the Sea-route is concerned.

The remarks that apply to freights on Sugar apply with equal truth to freight on cane and molasses also. What is required is a well-chalked out policy of low rates of freight in each case which will enable the factories to find a market for their molasses, and to tap even distant places for cane thus at once enabling them to extend their crushing season, giving longer lead to the railways and ameliorating the condition of a larger number of cultivators. The supply of a sufficient number of wagons for cane, and tank wagons for molasses is also a question which ought

to be considered sympathetically by the Railways. We hope that the Railways and the Steamship Companies will fully co-operate with the industry and render necessary help in the stabilisation of the industry on sound lines.

26. Outlook for 1935-36.

We have shown some of the most urgent problems before the Industry and the necessity of tackling them immediately. We may now turn our attention to the probable course of the Industry during the year 1935-36. As we have already seen, about 16 new factories are expected to start working during the next season and several old factories have extended the crushing capacities of their plants. There will necessarily be a proportionate increase in the production of sugar, with the result that the total production of sugar in India is expected to exceed the estimated yearly consumption by a few thousand tons. We will not venture just now to go beyond 1935-36 when production may be still greater, due if not to any addition in the number of factories, at least to an increase in the plants of existing factories and to improvement in manufacturing methods, extension of the crushing season etc. But even the above forecast means that by the end of the season 1935-36 we must completely put a stop to imports from foreign countries in the interest of the preservation of the indigenous industry. The production even in 1935-36 is expected to exceed consumption and if foreign sugar is not absolutely shut out, it may be difficult to find a market for Indian sugar in India. We are afraid to think of the consequences on the indigenous industry if the information about the sale made by Java in January 1935, of above 400,000 tons of sugar the bulk of which is said to be for the Indian market turns out to be correct. We do hope however, that the Government will not fail to give effective protection to the industry which has been brought into existence under the impetus of a policy of protection, and a promise to maintain it adequately for a period of 15 years.

27. *Per capita consumption of sugar.*

The question of this surplus production naturally leads us to enquire whether at home or abroad there is any possibility of finding out fresh markets for the surplus quantity of sugar produced. In a previous table, we have given an idea of the *per*

capita consumption of sugar in India which including that of *Gur* was about 26·2 lbs. in 1932-33. We have also noticed there that the consumption of sugar is about the same during the last two or three years. The consumption of *Gur* has been steadily increasing since the last few years. The general economic depression seems to have had the tendency of promoting the use of the cheaper article, *Gur*, but with a return of conditions to the normal and with a fall in the price of sugar there may be an increase in the *per capita* consumption of refined sugar in India. The *per capita* consumption of sugar (including *Gur*) in India is far behind the *per capita* consumption in other countries and this leads us to hope for an increase in the consumption of sugar in India in the years to come. (*Vide* table showing consumption of sugar in various countries in author's "Indian Sugar Industry—its Past, Present and Future").

The *per capita* consumption in European countries and in America is several times higher than in India, and it is probable that with the advent of prosperity there will be an increase in the consumption of sugar in India. It would be too optimistic, however, to hope for any sudden and large increase in the total consumption of sugar. The present estimated consumption is 9,00,000 tons per year. We may turn our attention to the possibility of exports of our sugar to external markets.

28. Possibilities of Export.

The season 1935-36 thus brings us to a period when we must begin to think seriously of finding markets for the disposal of our surplus home-production, outside the country. It is, indeed, a remarkable tribute to Indian Capital and enterprise that within such a short period of time as five years, the country has turned from a large importing unit into one which is ready to meet its home demand and even find a surplus for export. But this problem of export is not easy to tackle. It is related to World Sugar Economy and presents intricate problems about world's production and consumption, the policy of various countries, their tariffs etc.* We have hitherto been discussing the problem of

* For a discussion of this question see Appendix No. I. For a list of duties on sugar in various countries, see author's "Indian Sugar Industry—Its Past, Present and Future."

sugar manufacture in India from an isolated viewpoint and independent of world conditions, but in tackling the problem of export we ought to remember that the world economy has already been upset to some extent by the great reduction in our imports of sugar from Java. Japan is also importing smaller quantities of sugar from Java. Due to these and various other factors, a large number of plants in Java have become idle, and this also has had repercussions in other markets. There has been no fall in the production of other countries which could be met by our country. The world production is slightly bigger than consumption, and various countries have had to come to an agreement for restriction of exports and consequently of production. To the extent that we can export therefore, we must displace sugar manufactured and supplied by some other countries. Generally speaking, there is now no country to which our surplus supply could find its way, since all such countries are already supplied by other sugar-producing countries. It is also well-known how the production in many countries like Java, Cuba, Phillipines had to be curtailed within the last few years in view of decreasing demand from other countries.

But there is one possible avenue of export which we should consider. The United Kingdom has been consuming over 19 lacs tons of sugar annually, most of which (about 15 lacs tons) is being imported. Since 1924, however, the British Government have been giving an annual subsidy to the indigenous Beet Sugar Industry with a view to develop Britain's Sugar Production and reduce its dependence on foreign countries. The home-production of Britain in 1934 was 6,08,000 tons of sugar which was only equivalent to about one-third of its consumption.¹ In 1934, the British Government appointed The United Kingdom Sugar Industry Enquiry Committee under the Chairmanship of Mr. Wilfred Greene, K.C. to investigate into the effects of the subsidy given for 10 years to the British Beet Sugar Industry and to report as to whether there was any possibility of the industry standing on its own legs and whether the subsidy should be continued. The Committee consisted of three members. Their report was published in April 1935. In their report the majority (Mr. Greene,

¹'Facts about Sugar.' March 1935, page 88.

and Sir Kenneth Lee^{*} have declined to recommend continuance of subsidy amounting to several million pounds annually^{*} to an industry which has no reasonable prospect of ever becoming self-supporting, and on the production of a crop which, without that assistance would at the present prices of sugar, be practically valueless. They feel that there is no reasonable hope of placing the beet sugar industry on a self-sustaining basis, and that the cost of maintaining it at public expense is out of proportion to the benefits derived. The majority Committee have also considered the possibility of a rise in the price of sugar in the world as in that event, it might have been worthwhile to continue the subsidy. But taking all circumstances into consideration they conclude that "we cannot safely count on any substantial rise in the world price of sugar in the near future." The Minority Report of Mr. Cyril Lloyd, however, recommends the continuance of the subsidy. He observes that he dissents from the belief of the majority that there is little probability of an early increase in the price of sugar. He states that it seems to him to be sound in planning a long-term policy to budget for a rise in sugar prices. He further adds "For the purpose of a long-term policy we may reasonably look forward to a beet sugar industry requiring none of the present subsidy, but maintained by not exceeding the existing duty preference (*i.e.*, 4s. 9d. per cwt.)." He also observes that each rise of 2 sh. per cwt. in the price of sugar reduces the need of assistance by over a million pounds. He has therefore recommended a provision being made for the support of the Beet Sugar Industry for a further long term period at approximately its present size.

In June, 1935, the British Cabinet decided to continue the Sugar Industry subsidy with certain modifications for one year after August 1935 *i.e.* till August 1936. (It is proposed to discontinue payment of the subsidy on molasses.) It is not clearly indicated as to whether the subsidy will be continued after 1936. After 1936 the Government will either discontinue the subsidy altogether or they may consider the question of the continuance

^{*} Between 1924, when the Subsidy started, and 1934, out of total receipts from sugar amounting to £87,000,000 over £40,000,000 was provided by State Assistance. The direct and indirect cost to the State of assistance to the industry is expected to be £7 300,000 in 1934-35.

of the subsidy to areas where cultivation can be carried on efficiently with the minimum of assistance from the State. In any case we feel that there will be a fall in the production of sugar in Great Britain in the near future. Whether it will be big or small will depend upon the attitude of the Government in 1936. We feel, however, that the United Kingdom is likely to offer a potential market for sugar manufactured in India. Indian exporters of sugar to the United Kingdom should get an advantage as a result of the policy of Imperial Preference of being charged lower duties as compared with other Non-Empire countries. We hope the sugar manufacturers in this country as well as the Government of India will give their careful attention to this question and secure, to whatever extent is possible, the United Kingdom market for sugar manufactured in India. The acquisition of this market will be of great advantage not only to India, inasmuch as it will lead to a further development of the indigenous Sugar Industry, but also to Great Britain, as she will be less dependent in future on Non-Empire countries for her requirements of sugar. The opportunity is unique and India must avail itself of it to the fullest extent.¹

¹In Appendix No. I, we have discussed, briefly, the "World Sugar Situation" in the hope that it will be of use in understanding the problems pertaining to the Indian Sugar Industry.

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APPENDIX No. I.

WORLD SUGAR SITUATION.

29. Broad Outline of World Trade in Sugar.

We propose to give herein a brief resume of the world Sugar situation. In the body of the book, we have confined our attention solely to India except for a few references to Java. As we have now reached a stage when our internal production of sugar is sufficient to meet our domestic requirements, we must look beyond our own country and study the international aspect of Sugar Trade with a view to ascertain whether it would be possible for us to develop an export trade in sugar and if not, to give a new-orientation to our policy about further development of the Industry*.

Sugar is at present principally obtained from two agricultural commodities—cane and beet. Sugarcane is a tropical plant and hence all the chief cane-sugar producing countries lie in the tropical belt—Hawaii, Phillipines, Java, India, Cuba and portions of Africa, Australia, Central and South America. Beet-sugar production, on the other hand, is almost confined to Europe and portions of the United States of America. It must, however, be remembered that Beet-sugar Industry is of recent origin compared to that of cane-sugar and has been developed largely on account of political exigencies. Without this reason, it is doubtful if Beet would have anyday come out to compete successfully with cane in producing sugar on a commercial basis out of it. But it was the success of the embargo placed on sugar by the blockade during the Napoleonic wars which forced the nations of Europe to have a national supply of this essential commodity and this was rendered possible by the development of beet sugar industry under the protection of high tariff walls and bounties. Even today we are witnessing this development in the United Kingdom and in Soviet Russia. In fact this urge for national self-sufficiency is as strong as ever and in considering the world sugar situation we must remember this point.

However, in spite of all this stimulus, Beet-sugar production in the temperate areas (United States of America and Europe) falls far short of the requirements of those countries.* The cane-sugar Industry in the tropics with its favourable natural circumstances developed rapidly specially in the East and the West Indies. The natural movement of sugar has therefore been from the tropical cane-sugar belt to the temperate areas. The following table gives the production and consumption of Sugar in different countries on a percentage basis, the total annual production and consumption of the world having been taken to be 100·00.

TABLE No. XIII.

World Sugar Production, and consumption on percentage basis, 1933-34.†

—			Production.	Consumption.
Total World—(Long tons, raw) ...			25,709,000 %	28,227,000 %
NORTH AMERICA.				
‡United States	...	...	6·99	20·80
West Indies (including Cuba etc.)				
Oceanic Islands (Hawaii etc.) and				
Central America	...	...	20·45	4·00
TOTAL NORTH AMERICA ...			27·44	24·80
SOUTH AMERICA.				
TOTAL ...			6·39	5·27
‡EUROPE.				
Germany	...	...	5·54	5·80
France	...	...	3·62	4·12
Russia	...	...	4·21	3·90
United Kingdom	...	...	1·92	8·39
Other Countries	...	...	12·60	13·73
TOTAL EUROPE ...			27·89	35·94

*Per capita consumption of sugar is highest in these countries.

†Figures from "Lamborn's" Sugar Market Reports.

‡Beet-Sugar Temperate Areas.

TABLE No. XIII—*contd.*

				Production.	Consumption.
ASIA.					
CHINA	...	...	...	1.07	2.52
India	...	...	...	18.95	19.35
Japanese Empire	...	...	...	3.12	3.79
Java	...	...	...	2.97	1.19
Phillipines	...	...	...	5.57	0.36
Others	...	...	...	0.14	2.30
TOTAL ASIA				31.82	29.51
AFRICA.					
TOTAL				3.66	2.75
OCEANIA.					
Australia	...	...	...	2.34	1.32
Others including New Zealand, Fiji, etc.				0.46	0.41
TOTAL				2.80	1.73
GRAND TOTAL				100.00	100.00

It will be seen from the foregoing table that whereas the consumption of sugar in Europe and the United States of America is about 56.74% of the total world consumption, they produce only 34.88% of the total world output, and this production represents the total beet sugar crop of the world, the remaining 65.12% being cane sugar.* It will also be noted from the above table that *India now ranks as the largest sugar producing country in the world with about 19%† of the total world production to her credit.* It is gratifying to find that India which was the birth-place of Sugar‡ (as also of textiles), has again come into its own by taking the lead from all other countries in the matter of production of sugar.

*According to other estimates (Willet and Gray) the total production of Sugar in the World in 1933-34 was 25,161,000 long tons raw Sugar value. The figures of total cane and beet sugar production were 16,435,000 and 8,726,000 tons respectively. The percentage of these to total production however comes to practically the same.

†It should be remembered that this figure includes not only white sugar but also gur or raw sugar produced in India.

‡Vide author's Indian Sugar Industry—Its Past, Present and Future—1934, pp. 350..”

30. Total World Production, Consumption and Stocks.

We have seen broadly the nature and the line which world trade in sugar follows. But the most important and determining factor in this trade as in any other is the relation of production to consumption and the stock-position. The following table gives the yearly production, consumption and the carryover of stocks of sugar in the world for the last 13 years.

TABLE No. XIV.

Yearly Production, consumption and the Carryover of stocks for the last 13 years (in long tons.)†

Crop year.	Stocks September 1st.	Produc- tion.	Consump- tion.	Stock, September 1st	Percentage relation stocks to Consump- tion.
1922-23 ...	5,681	18,742	19,361	4,462	23.0
1923-24 ...	4,462	20,662	19,835	5,209	26.5
1924-25 ...	5,269	24,556	22,680	7,155	31.5
1925-26 ...	7,155	24,938	24,313	7,800	32.1
1926-27 ...	7,800	24,567	24,725	7,642	30.9
1927-28 ...	7,642	26,616	26,068	8,160	31.3
1928-29 ...	8,160	28,057	26,967	9,250	34.3
1929-30 ...	9,250	28,690	26,374	10,566	40.1
1930-31 ...	10,566	28,021	27,125	12,862	45.6
1931-32 ...	12,862	26,131	26,724	12,060	45.2
1932-33 ...	12,060	24,602	26,193	10,568	40.3
1933-34 ...	10,568	25,700	26,287	9,090	38.0
1934-35* ...	9,990	25,760	26,534	9,225	34.8

* Estimates for 1935.

† Figures from "Lamborn's."

N. B.—Willet and Gray's estimates of production of sugar (February, 1935).

	Total cane and Beet.	
	Long tons.	
1932-33	24,090,395
1933-34	25,161,673
1934-35	25,184,633

A study of this table will show that though in no particular year was there any marked variation between production and consumption, the stocks of sugar nevertheless continued to mount up slowly but steadily year after year, till in 1931, August, they reached their peak. Since then, however, there has been a continuous and uninterrupted decline in stocks, which has eased the international situation to a certain extent. 1935 will be the fourth consecutive year in which a decrease in world sugar stocks will be recorded, when the carry-over is expected to be 9,225,000 long tons raw sugar, value, as compared with 9,990,000 tons on hand in August, 1934, a falling off of 765,000 tons or 7·6%. The total reduction in stocks during the last 4 years has been about 3,000,000 tons or about 25% of the stocks in August 1931. This reduction has been brought about almost wholly by a limitation of production which has fallen from about 28 million tons to 25 million tons as will be seen from the figures of production given in the above table.

31. International Sugar Convention.

The excessive stocks on hand of sugar towards 1930-31 and the consequent falling off in prices led the principal sugar exporting countries of the world to consider the possibility of some united plan to adjust the exports of each country and to readjust production so as to cause the existing surplus stocks to disappear within a reasonable period, at the same time avoiding the formation and accumulation of new surpluses. On May 9th, 1931, therefore an agreement (generally known as 'Chadbourne Agreement') was signed at Brussels by representatives of Cuba, Java, Germany, Czechoslovakia, Poland, Belgium and Hungary to which Peru and Yugoslavia joined later. Under the agreement, export quotas were fixed for each member country for a period of five years (to terminate on 1st September, 1935), and the supervision of the agreement was placed in the hands of an International Sugar Council, with headquarters at the Hague. During the currency of the Agreement the stocks of European countries have declined but the stocks of Java and Cuba, the principal sugar producers have not been reduced due to the restriction of demand from several of their markets. If, in the future, the question of the renewal of this agreement is to be considered, which seems likely

as long as the present disequilibrium between production and consumption lasts, the co-operation of India, the U. S. A. and Soviet Russia who have since increased their production will also have to be sought. Efforts are being made under the ægis of the World Economic Conference to arrive at some International Agreement for adjusting exports from sugar producing countries to various markets in order to avoid a fall in the price of sugar which would result in the event of there being any unregulated competition, but it is difficult to say what measure of success they will meet with.

32. Java.

From the point of view of the Indian Sugar Industry, the most important factor to be considered in the World Sugar situation is that of Java. As we have seen, before the development of the White-Sugar Industry in India, it was Java which used to supply a great bulk of the sugar to India, and even now the Indian Sugar Industry has to live in constant dread of Java, and the prices of sugar in the Indian market are influenced by the import prices of Java sugar at the ports. A study of the situation in Java therefore merits close attention.

Immediately before and after the War upto 1920, the annual production of sugar in Java was about 1,500,000 tons. Her chief markets were India, Japan and some of the European countries. Since 1920 onwards for a decade Java's industry made continuous progress till in 1930 the output reached 2,900,000 tons, almost double that of 1920. As we have seen, it was exactly about this time that the stocks of sugar in the world markets also reached their peak and consequently there was a fall in the prices of sugar. Thus at a time when production in Java reached its peak, sugar prices also collapsed and what is more, the vast markets of India and Japan* which were her close preserves were lost to her, shortly after 1930, by the progressive development of domestic production in those countries. The result was a heavy accumulation of stocks in Java during the period beginning from 1930.

*Production of sugar in Japan, including Formosa, during the current 1934-35 campaign is forecast at 1,125,000 long tons as against 808,000 tons manufactured in 1933-34.

TABLE No. XV.

Java Sugar Crop, 1931 to 1937.

(Crushing Season—April to November.)

Year.	No of mills working.	Land under cane in acres.	Cane harvested. (Tons.)	Total Sugar Produced. (Tons.)	Stocks on 1st April each year (Tons.)	Exports. (Tons.)
1931 ..	178	193,721	26,100,000	27,28,776	...	15,53,898
1932 .	166	123,924	22,500,000	25,19,864	1,631,612	15,10,601
1933 ...	99	208,617	11,000,000	13,13,663	2,532,638	11,50,387
1934 ...	47	93,613	5,152,122	6,36,067	2,519,619	10,89,734
1935 (Est.)	59	...	...	4,78,000	1,626,000	11,87,000
1936 (Est.)	...	...	...	1,55,000	800,000	10,00,000
1937 (Est.)	...	...	...	...	nil	...

N.B.—The Annual domestic consumption of Sugar in Java is about 300,000 tons

Thus, even the International Sugar Agreement (Chadbourne Plan) arrived at in 1931 could not do much good to Java and by force of circumstances she is still left with large stocks on hand at a time when other exporting countries have wholly or partly eliminated their excess supplies. The consequences of such accumulation of stocks in Java have been known too well to those connected with the Sugar Industry in India to need a detailed exposition here. We have also seen how Java through her Single Sugar Selling Organization, the "NIVAS" has tried to counteract the protection given to the Indian Sugar Industry by imposition of a protective duty, by constant reduction of price and increase of exports to the Indian market during the last two years, culminating in the reported sales during January, 1935, of over 400,000 tons of sugar, a bulk of which is said to be destined for the Indian market.

We are not sure whether this report is correct, but it is alarming, as India now needs practically no import of sugar from outside sources for her consumption.

Whereas on the one hand, Java has been selling large quantities of sugar in India at reduced prices with a view to deplete her huge stocks, she is also reported to be carrying through a drastic plan of crop-curtailement which has brought down her production in 1934 to less than one-fourth of 1931. This curtailment in production, and large exports have brought down her stocks, the estimated quantity of which on 1st April, 1935, was only 1,626,000 tons or a reduction of about 33% from the figure on 1st April 1934. On the assumption therefore of Java being able to maintain both her exports and production at the present level it is probable that within the next two years she would be able to clear off all her surplus stocks and may be able to commence her 1937 crushing season* with negligible or no stocks in hand. It is also reported that following this period, *i. e.* after 1937, a new plan will be put in force by which the outturn of the mills in general will be restricted to 50% of their rated capacity, thus reducing Java's annual production to about 1,500,000 tons this being the estimated quantity that the island can readily dispose of. Reserve factory capacity will, however, be available in case conditions warrant an increase in output.

But all these forecasts are based on various assumptions and assumptions may go wrong at any moment. It is already reported that the pick-up in prices for Java sugar which began in December last and was accelerated in January 1935, by the news of frost in India, by the reported huge sale made in that month, has resulted in a stronger position for Java sugar and may lead to a change in the policy of the 'Nivas'. Whereas the main consideration heretofore was to get rid of as much sugar as possible, in view of the heavy accumulation of stocks, prices may now be expected to take precedence over export urgency owing to the stocks being reduced considerably.

Whatever these forecasts may point to, at least one thing is clear and that is that the Indian Sugar Industry should keep a close watch over the development in the position of the sugar industry in Java, and it is the duty of the Government of India also to be ready at all times to take immediate and effective action to protect the indigenous industry against all foreign

*Java's crushing season is from April to November.

inroads. There may be numerous difficulties in the way of India exporting sugar to other countries, and the Government may not be able to help much there, but it is not at all difficult for the Government to maintain the Indian market as a close preserve for the indigenous industry as most of the sugar-producing countries are doing, for national interest.

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APPENDIX II.

LIST OF SUGAR MILLS IN INDIA (1935)

*Showing their location, crushing capacity, and the names and addresses
of their Managing Agents or Proprietors.*

LIST OF SUGAR MILLS IN INDIA (1935).

(Including those under erection or provisionally projected for working during the season 1935-36.)

EXPLANATION :—

Mills marked with an asterisk() are members of the Indian Sugar Mills Association. Asterisk in the last but one column denotes mills which have also got Gur-refining plants.*

†-Mills marked thus are under erection or, provisionally projected for working during 1935-36.

“S” = Sulphitation. “DS” = Double Sulphitation. “C” = Carbonatation. “DC” = Double Carbonatation.

Name of factory, with full name and address of Managing Agents or Proprietors.

Location.

District.

Nearest Railway Station.

Daily crushing capacity in tons.

(2)

BENGAL.

1. *North Bengal Sugar Mills Co., Ltd., M/A. Soorejmul Nagarmull, 61, Harrison Road, Calcutta.	Gopalpur.	Rajshahi.	Gopalpur,	E. B. R.	800*	DS
2. *Setabganj Sugar Mills, Ltd., M/A. Soorejmul Nagarmull, 61, Harrison, Road, Calcutta.	Setabganj.	Dineajpur.	Setabganj,	Do.	400*	DS
3. *Shree Radha Krishna Sugar Mills, Ltd., M/A. Jhaajar Brothers, Ltd., 188, Harrison Road, Calcutta.	Beldanga.	Murshidabad.	Beldanga,	Do.	400	S

4. †The Oriental Sugar Works, Ltd., M/A. Jayanti Agency, Calcutta.	Majdia.	Murshidabad.	Majdia,	E. B. R.	50 (Approx.)
5. Deshabandhu Sugar Mills, Ltd., M/A. The Industrial Agency, 68, Patuatuly, Dacca.	Charsindur.	Dacca.	Ghorashal (Flag)	A. B. R.	150 DS
6. †The East Bengal Sugar Mills, Ltd., M/A. Messrs. Ramanath Das & Co., Ltd., Registered Office, No. 30/31/32, North Brook Hill Road, Dacca.		Dacca.			
7. †Serampore Sugar Works, Ltd. Serampore	Serampore.				
8† The All-India Sugar Mills, Ltd., H. O., 135, Canning Street, Calcutta.	Katwa.	Burdwan.	Katwa	E. I. R.	50 (Approx)
9† Shikarpur Sugar Mills, M/P. Mr. P. D. Raikut, M. L. C., Jalpaiguri.	Shikarpur.	Jalpaiguri.	Jalpaiguri.	E. B. R.	(3)

BIHAR AND ORISSA.

10. *Sakri Sugar Works of Darbhanga Sugar Co., Ltd., M/A. Octavius Steel & Co., Ltd., 14, Old Court House Street, Calcutta.	Sakri.	Darbhanga.	Sakri,	B. N. W. R	700 S
11. *Lohat Factory of Darbhanga Sugar Co., Ltd., M/A. Octavius Steel & Co., Ltd., 14, Old Court House Street, Calcutta.	Lohat.	Do.	Pandaul	Do.	1300 S

Name of factory, with full name and address of Managing Agents or Proprietors.

Name of factory, with full name and address of Managing Agents or Proprietors.	Location.	District.	Nearest Railway Station.	Daily crushing capacity in tons.
12. *Ryam Sugar Co., Ltd. M/A. Begg, Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Ryam Factory Ryam P. O.	Darbhanga.	Tarsarai B. N. W. R.	700* C
13. *Samastipur Central Sugar Co., Ltd., M/A. Begg Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Samastipur.	Do.	Samastipur, Do.	700* S
14. †Dalsingarai Sugar Works, Ltd., M/A. Behar Trading Corporation, Samastipur.	Do.	Do.	Do.	
15. *The New India Sugar Mills, Ltd., M/A. B. R. Loyalka, 7, Lyons Range, Calcutta.	Hasanpur Rd. P. O. Sakarpura.	Do.	Hasanpur Rd. Do	DS
16. *Semapur Sugar Works, of Purnea Sugar Co., Ltd., M/A. Octavius Steel & Co., Ltd., 14, Old Court House Street, Calcutta.	Semapore.	Purnea.	Semapore, Do.	700 C
17. *Japaha Sugar Concern, M/P. S. & G. Richardson, and others, Muzaffarpur,	Japaha, Bhicanpore P. O.	Muzaffarpur.	Muzaffarpur Do.	450/500 S
18. *Motipur Sugar Factory, Ltd., M/A. Seth Haji Abdullah Haroon, M. L. A., Napier Road, Karachi, and Seth Haji Abdul Rahim Osman, 2, Rajmohan Street, Calcutta.	Motipur.	Do.	Motipur, Do.	900/1200 DO
19. *Belsund Sugar Co., Ltd., M/A. James Finlay & Co., Ltd., 1, Olive Street, Calcutta.	Riga P. O.	Do.	Riga, Do.	450 S

20. *Barrah Sugar Factory of Champaran Sugar Co., Ltd., M/A. Begg Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Bara-Chakia P O	Champaran.	Chakia.	B. N. W. R	900/1000*	C
21. *Shree Hanuman Sugar Mills, Ltd., M/A. Daulatram Rawatmull, 178, Harrison Road, Calcutta.	Motihari.	Do.	Motihari,	Do.	600*	DS
22. *The Sugauli Sugar Works, Ltd., M/D. Md. Hanif & Amjadali. 3, Rajmohan Street, Calcutta.	Sugauli.	Do.	Sugauli,	Do.	500	S
23. *Motilal Padampat Sugar Mills Co., Ltd., M/A. Kamalpat Motilal, Chatai Mahal, Cawnpore.	Majhowlia.	Do.	Majhowlia,	Do.	500/600	S
24. *Chanpatia Sugar Factory of Champaran Sugar Co., Ltd., M/A. Begg Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Chanpatia.	Do.	Chanpatia,	Do.	900/1000	S
25. *Pursa Sugar Factory, M/A. Pursa Limited, Pursa.	Pursa Lauriya, P. O.	Do.	Do,	Do.	400/500	S
26. *New Swadeshi Sugar Mills, Ltd., Narkatiaganj, M/A. Birla Brothers Ltd., Jehangir Wadia Building, 2nd floor, Esplanade Road, Fort, Bombay.	Narkatiaganj.	Do.	Narkatiaganj,	Do.	750	S
27. *Harinagar Sugar Mills, Ltd., M/A. Narayanlal Bansilal, 207, Kalbadevi Road, Bombay.	Ramnagar.	Do.	Harnagar,	Do.	800*	LS

Name of factory, with full name and address of Managing Agents or Proprietors.	Location.	District.	Nearest Railway Station.	Daily Crushing capacity in tons.
28. *Gaya Sugar Mills, Ltd.	Guraru.	Gaya.	Guraru, E. I. R.	500/800* DS
29. *The South Bihar Sugar Mills, Ltd., M/A. Nirmal Kumar Jain & Co., Arrah,	Bihta.	Patna.	Bihta, E. I. R.	950* S
30. †The Patna Sugar Mills, Ltd., M/A. Amirchandra & Co., Arrah.	Khagaul.	Patna.	Dinapore, E. I. R.	
31. *Dumraon Raj Sugar Factory, P. O. Dumraon.	Bikramganj.	Shahabad.	Bikramganj, A. S. I. R.	250
32. *Rohtas Sugar Ltd., M/A. Imam Jaidayal & Co., P. O. & Tel. O : Dehri Sugar Mill, (Shahabad).	Dehri.	Do.	Dehri-on-sone, E. I. R.	1200/1000* DO
33. *Ganga Deshi Sugar Factory, M/P. B. Behari Lal, Buxar.	Buxar.	Do.	Buxar, E. I. R.	100*
34. *Sitalpur Sugar Works, Ltd., M/D. Ghosh & Dutt. 98, Dhuramtolla Street, Calcutta and Indian Press Buildings, Allahabad	Sitalpur.	Saran.	Sitalpur, B. N. W. R.	450-600 S
35. †The Kisan Sugar Mills, Ltd., M/A. The Bihar Industrial Chamber, Vishramghat, Hajipur.	Sitalpur.	Do.	Sitalpur, Do.	
36. *Marhowrah Sugar Factory of Cawnpore Sugar Works, Ltd., M/A. Begg, Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Marhowrah	Do.	Marhowrah, Do.	850* DO

37. *Maharajanji Sugar Factory, Lessees . Bhargava Bros., & Co., Maharajanji.	Maharajanji.	Do.	Maharajanji,	Do.	150*
38. *The Behar Sugar Works, of the Industrial Corporation Ltd., M/A Bakubhai Ambalal & Co., P. O. Box 28, Ahmedabad.	Pachrukhi	Do.	Pachrukhi,	Do.	800* DC
39. *New Savan Sugar & Gur Refining Co., Ltd., M/A. Andrew Yule & Co., Ltd., 8, Olive Row, Calcutta.	Siwan.	Do.	Savan,	Do.	650* S
40. Indian Sugar Works, Prop., Moulvi Mohd. Abdul Razzaque, P. O. Savan, Dist., Saran.	Siwan.	Do.	Savan,	B. N. W. R.	400 S
41. Siwan Deshi Sugar Factory. Prop. Messrs. Noori Mian & Co.	Siwan.	Do.	Savan,	Do.	Gur only.
42. *Bharat Sugar Mills Ltd., M/A. Birla Bros. Ltd., 8, Royal Exchange Place, Calcutta.	Sidhwalia.	Do.	Sidhwalia	Do.	350* S
43. *Sasa Musa Sugar Works, Ltd., M/A, Mousell & Co., Ltd., P. B. 2164, Calcutta.	Sasa Musa.	Do.	Sasa Musa,	Do.	450- S
44. *The Vishnu Sugar Mills, Ltd., M/A. Bilasrai Banarslul & Co., Agakhan Building, Dalal Street, Bombay.	Harkhua. P. O. Gopal- ganj.	Do.	Harkhua,	Do.	450 S
45. *The Shri Krishna Gyanoday Sugar Mills. Prop. Maharaja Bahadur, Raj Hathwa.	Hathwa, P. O. Mirganji.	Do.	Hathwa,	Do.	800*

Name of Factory, with full name and address of Managing Agents or Proprietors.	Location.	District.	Nearest Railway Station.	Daily crushing capacity in tons.
46. Shri Lakshmi Narayan Sugar Works, Ltd., M/A. Gupta Bros., & Co., Manoharpatti, P. O. Nirmali.	Monohar- patti. P. O. Nirmali.	Bhagalpur.	Nirmali, B. N. W. R.	75
UNITED PROVINCES.				
47. *Purtabpore Co., Ltd., M/A. Begg Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Mairwa.	Gorakhpur.	Mairwa, Do.	669 DO
48. *Noori Sugar Works, Prop., Noori Mian & Co., Bhatni.	Bhatni.	Do.	Bhatni, Do	500* S
49. *Shree Sikaram Sugar Co., Ltd., M/A. Karachand Thapar & Bros., Ltd., 6, Royal Exchange Place, Calcutta.	Baitalpur.	Do.	Baitalpur, Do.	600 S
50. *Gauri Sugar Factory of Cawnpore Sugar Works, Ltd., M/A. Begg Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Gauribazar.	Do.	Gaurizabar, Do.	400* S
51. Hanumat Sugar Mills. Prop. Lakshminarayan Mathura Prosad, Deoria.	Deoria.	Do.	Tahsil Deoria, Do.	70*
52. *Saraya Sugar Factory, Senior M/Partner : S. B. Dr. Sir Sundar Singh Majithia, Sardarnagar.	Sardarnagar.	Do.	Sardarnagar, Do.	2000* DS
53. *Diamond Sugar Mills, Ltd., M/A. Murarka & Sons, Ltd., 10, Olive Row, Calcutta.	Pipraich.	Do.	Pipraich, Do.	400 DS

54. *Pipraich Sugar Mills, Ltd., Prop., Mian Jawad Ali Shah, Mian Bazar, Gorakhpur.	Do.	Do.	Do.	250	S
55. *The Shankar Sugar Mills, Ltd., M/A. Inderchand Harirau.	Captainganj.	Do.	Captainganj	600*	S
56. Punjab Sugar Mills Co., Ltd., M/A. Messrs. Narang Bros. & Co., Ltd., 5, Montgomery Road, Lahore.	Ghughli.	Do.	Ghughli	600*	S
57. *Mahabir Sugar Mills, Ltd., M/A. Dwarkadas Baijnath, Siswa Bazar.	Siswa Bazar.	Do.	Siswa Bazar	653	S
58. *The Vishnu Pratap Sugar Works Ltd., M/D. R. K. Krishna Pratap Narain Singh and Rani Nepali Devi of Padrauna.	Khada.	Do.	Khada,	400	S
59. *The Lakshmi Devi Sugar Mills, Ltd., M/A. Messrs. Agarwal & Co., P. O. Ohhitauni.	Ohhitauni.	Do.	Ohhitauni,	400/600	DS
60. *Ishwari Khetan Sugar Mills Ltd., M/A. Devidutt Surajmull, Padrauna, Gorakhpur.	Lakshmganj.	Do.	Lakshmganj,	500*	S
61. *Ramkola Sugar Mills Co., Prop : R. B. Lala Tirathram Shah, Isher Dass Sawhney, Navashahar (Dist. Hazra), N. W. F. P.	Ramkola.	Do.	Ramkola	499/600	DS
62. *Maheshwari Khetan Sugar Mills Ltd., M/A. Messrs. Devidutt Ohaturbhuj, Ramkola.	Do.	Do.	Do.	500	DS

Name of Factory, with full name and address of Managing Agents or Proprietors.	Location.	District.	Nearest Railway Station.	Daily crushing capacity in tons.	
63. *Padrauna Rajkrisna Sugar Works Ltd., M/D., R. B. Jagadish Narain Singh of Padrauna.	Padrauna.	Gorakhpur.	Padrauna, B. N. W. R.	600*	S
64. *Jagdish Sugar Mills Ltd., M/A Raja Bahadur Brinakaran Singh & Co., Padrauna.	Kathkuiyan. Padrauna P. O.	Do.	Kathkuiyan, Do.	490	S
65. *United Provinces Sugar Co. Ltd., M/A. James Finlay & Co. Ltd., 1, Olive Street, Calcutta.	Bubnowlie Seorahi P. O.	Do.	Tamkoti Rd. Do.	800*	S
66. *Ganesh Sugar Mills Ltd., M/A Poddar Jaipuria & Co., P. 23, Vivekananda Road, Calcutta.	Pharendra.	Do.	Pharendra. Do.	500	DS
67. *Ledi Sugar Factory. M/A. Dr. K. K. Bhargava, Nichlaul.	Ledi. P. O. Nichlaul	Do.	Siswa Bazar, Do.	80	S
68. †Shree Parbati Sugar Mills, Co., Ltd., P. O. Chauri Chaura.	Chauri- Chaura.	Do.	Chauri- Chaura.		
69. †The Pashupati Industrial, Agricultural & Sugar Corporation, Ltd. Nautanwa,	Nautanwa.	Do.	Nautanwa, Do.		
70. *Campierganj Sugar Mills, Ltd. M/D. M. Nasarulla, Esq., B.A., M. L. C.	Campierganj	Do.	Campierganj Do.	150	S.
71. *The Madho Kanhaya Mahesh Gauri Sugar Mills, Ltd.	Munderwa.	Basti.	Munderwa, Do.	500/600	S

72. *Basti Factory of The Basti Sugar Mills Co., Ltd., M/A. Narang Bros. & Co., Ltd., 5, Montgomery Road Lahore.	Basti.	Basti.	B. N. W. R.	530/900*	S
73. *Walterganj Sugar Factory of The Basti Sugar Mills Co., Ltd., M/A. Narang Bros. & Co., Ltd. 5, Montgomery Road, Lahore.	Walterganj.	Do.	Walterganj,	550/800*	S
74. The Popular Sugar Co., Ltd., M/A. Seth Nidhan Singh & Sons, Gujranwala (Punjab).	Barhni. P. O Ramduttganj	Do.	Barhni,	600	DS
75. †Shiromani Sugar Mills, Ltd., M/A. Pt. Purshotam Prosad Pande Narharia, Basti.	Khalilabad.	Do.	Khalilabad	850/1000	
76. †Lakarmandi Sugar Mills Co., Ltd., †Lakarmandi.	Lakarmandi. P. O. Nawab- ganj, (Gonda).	Gonda.	Katra	100/150	DS
77. *The Seksaria Sugar Mills. Ltd., M/A. Govindram Rannath & Co., 18, Mullick Street, Calcutta.	Babhnan.	Gonda.	Babhnan,	400	
78. *Nawabganj Sugar Mills, Co., Ltd., M/A. Narang Bros. & Co., Ltd., 5, Montgomery Road, Lahore.	Nawabganj	Do.	Nawabganj.	1400	S
79. *Balrampur Sugar Co., Ltd., M/A. Begg Sutherland & Co , Ltd., P. B. 21, Cawnpore.	Balrampur.	Do.	Balrampur,	700	S
80. *Seth Gulzarimull Ramchand Sugar Mills.	Jarwal Road.	Bahraich.	Jarwal Rd.	400	S

Name of Factory, with full name and address of Managing Agents or Proprietors.	Location.	District.	Nearest Railway Station.	Daily crushing capacity in tons.
81. *Burhwal Sugar Mills, Ltd., M/A. Maladin Bhagwandas, Collectorganj, Cawnpore.	Burhwal.	Barabanki.	Burhwal, B. N. W. R. E. I. R.	150'
82 Lucknow Sugar Works,	Aishbagh.	Lucknow.	Aishbagh, O. & R. R.	400'
83. *Ratna Sugar Mills, Co., Ltd., M/A. Kashiprasad & Co., 107, Street Feild Road, Benares City.	Shahganj.	Jaunpur.	Shahganj, E. I. R.	500* DS
84. *Shree Krishna Deshi Sugar Works, Prop. Kishorylal Makundlal, Jhusi.	Jhusi.	Allahabad.	Jhusi, B. N. W. R.	400 S
85. *Tribeni Desi Sugar Works, Prop. A. Beni Prasad, Naini.	Naini.	Do.	Naini, E. I. R.	200 S
86. †The Lakshmi Sugar & Oil Mills, Ltd., H. O. Amritsar.	Hardoi.	Hardoi.	Hardoi. Do.	1200 DS
87. U. P. Co-operative Sugar Factory Ltd., Hon'ble R. B. Mathura Prasad Mehrotra, Biswan.	Biswan.	Sitapur.	Biswan, B. N. W. R.	300 DS
88. *The Oudh Sugar Mills, Ltd., M/A. Birda Bros. Ltd., Jehangir Wadia Building, Esplanade Road, Bombay.	Hargaon	Do.	Hargaon, R. K. R.	1000 DS
89. *The Lakshmi Sugar Mills Co., Prop. Seth Ramratan, Rais, S/o. Late R. B. Seth, Ayodhya Prasad. Anarkali, Lahore.	Maholi	Do.	Maholi, E. I. R.	400' S

90. Aira Sugar Factory of Shree Mahalakshmi Sugar Corporation, Ltd., Kheri.	Khamaria	Kheri	Lakhimpur,	R. K. R.	150	S
91. *The Hindusthan Sugar Mills Ltd., M/A. Bachharaj & Co., Ltd., 395, Kalbadevi Road, Bombay.	Golagokaran- nath.	Do.	Golagokarannath,	R. K. R.	1850	DS
92. *Rosa Sugar Works & Distillery of Carew & Co., Ltd., M/A Lyall Marshall & Co., 4, Fairlie Place, Calcutta.	Rosa	Shahjahanpur	Rosa,	E. I. R.	600*	
93. *H. R. Sugar Factory, Ltd., M/D. Raja Radha Raman.	Bareilly	Bareilly	Bareilly,	Do.	600	S
94. Khandke Sugar Mills Ltd., M/A. D. N. Khandke & Co., Baheri.	Baheri	Do.	Baheri,	R. K. R.	150*	
95. *The Kesar Sugar Works Ltd., M/A. Kilachand Devchand & Co., Apollo Street, Bombay.	Do	Do.	Do.	Do.	800*	DS
96—98. *L. H. Sugar Factory and Oil Mills. Ltd., (3 Units) Prop. Sahu Jagdish Prasad. Pilibhit.	Pilibhit	Pilibhit	Pilibhit,	Do.	{ 150 800 800 }	S S S
99. *Raza Sugar Co. Ltd., M/A. Govan Bros., (Rampur) Ltd., Rampur State.	Rampur	Rampur State	Rampur	E. I. R.	600/850	S
100. †Bulund Sugar Mills, M/A. Govan Bros., (Rampur) Ltd., Rampur State.	Rampur	Rampur State.	Rampur,	E. I. R.	600	DC

Name of factory, with full name and address of Managing Agents or Proprietors.					Location.	District.	Nearest Railway Station.	Daily crushing capacity in tons.
101. *Upper Ganges Sugar Mills Ltd., M/A. Birla Brothers Ltd., 8, Royal Exchange Place, Calcutta.					Seohara	Bijnor	Seohara,	E. I R. 1000
102. †Seth Shiv Prasad Banarsidas Sugar Mills, Prop Messrs. Shiv Prasad Banarsidas Agarwal, 85, Lake Road, Lahore.					Bijnor.	Do.	Bijnor,	Do.
103. *The Dhampur Sugar Mills. Ltd., M/D. Sahu Ram Swarup 12, Civil Lines, Barielly.					Dhampur	Do.	Dhampur,	Do. 450
104. Bhogpur Sugar Works, Raja Hari Kishen Kaul, & Ishwardas Lakshmidas, Hughes Road, Bombay.					Bhogpur P. O. Najibabad.	Do.	Najibabad,	Do. 50
105. *Jallakshmi Sugar Co. Ltd., M/D. Jishnu Lal Esq., H. O. Doiwala.					Doiwala.	Dehradun.	Doiwala,	Do. 350* DC
106. Jwalapur Sugar Factory, Prop. Haji Habib Kasam, Collectorganj, Cawnpore.					Jwalapur.	Saharanpur.	Jwalapur,	Do. 100
107. The Ganga Sugar Corporation, Ltd., H. O. College Road, Rawalpindi.					Deoband.	Do.	Deoband,	N. W. R. 400/600 DC
108. *Upper Jumna Swadeshi Sugar Mills, Ltd., M/A. Hariraj Swarup, Rajendralal & Brothers, Muzaffarnagar.					Mansurpur.	Muzaffarnagar.	Mansurpur,	Do. 400/600* S

109. *Upper India Sugar Mills, Ltd., M/A. Mitra Mandel, Khatauli.	Khatauli	Do.	Khatauli,	Do	500/800	D\$
110. Amritsar Sugar Mills, Co., Ltd., M/D. Sirdar Amar Singh Sahab, Amritsar (Punjab).	Rohanakalan.	Do.	Rohanakalan.	Do.	600—800*	£
111 Upper Doab Sugar Mills Ltd., M/A. Hariraj Swarup Rajendralal & Brothers, Muzaffarnagar.	Shamli.	Muzaffarnagar.	Shamli	S. S. L. R.	800*	₹
112. *The Diwan Sugar Mills, Prop. Seth Dhanpatmal Diwanchand, Lyallpur, (Punjab).	Sakhoti- Tanda.	Meerut.	Sakhoti-Tanda,	N. W. R.	400*	DS
113. *Daurala Sugar Works, Prop. Delhi Cloth and General Mills Co., Ltd., Delhi.	Daurala.	Do	Daurala	Do.	800*	(15)
114. R. B. Narain Singh Sugar Mills Ltd. M/D. S. S. Sardar Ranjit Singh, 2A, Curzon Road, New Delhi.	Baraut.	Do.	Baraut,	S. S. L. R.	600/750	
115 Indra Sugar Works. Ltd., M/A. Incharam & Co, Clement Street, Meerut.	Malyana (Meerut.)	Do.	Meerut City, N. W. R.		300*	₹
116 Delhi Sugar Mills, Ltd., M/A. Krishna Sugar Syndicate, 11, Curzon Road, New Delhi.	Mohiuddimpur	Do.	Mohiuddimpur, Do.		400*	
117. *Modi Sugar Mills, Ltd., M/A. Multanimul & Sons, Patiala.	Begamabad.	Do.	Begamabad,	Do.	500*	DS

Name of Factory, with full name and address of Managing Agents or Proprietors.	Location.	District.	Nearest Railway Station.	Daily crushing capacity in tons.
118. *Simbhaoli Sugar Mills, M/D. Prop : Sardar Raghunir Singh Sandhanwalia, O. B. E., P. O. Baksar.	Simbhaoli. P. O. Baksar.	Meerut.	Simbhaoli,	400* S
119. Prag Sugar Works, Prop : Shamlal Pragharayan, Rawatpara, Agra.	Kichha.	Nainital.	Kichha.	830* DS
120. *The Neoli Sugar Factory, Prop : The Saraswati Sugar Syndicate, Ltd., 16, Dinga Singh Building, The Mall, Lahore.	Manpur- Nagaria. (P. O. Soron).	Etah	Manpur-Nagaria, R. K. R.	450—680 DS
121. Srikrishnadas Sugar Mills & Distilleries. Prop. L. Srikrishnadas, Unao,	Unao.	Unao.	Unao,	O. & R. R. Gur only.
122. Bajinath Balmakund Sugar Mills, Prop : Bankey Behari and Madan Behari Lal, Anwarganj, Cawnpore.	Anwarganj.	Cawnpore	Anwarganj B. N. W. R.	Gur only.
123. Kamlapat Motilal Gutaiya Sugar Mills. Prop : Messrs. Kamlapat Motilal Cawnpore.	Rawatpur. P. O. Nawab- ganj.	Do.	Rawatpur B. B. & C. I.	Gur only.
124. *Cawnpore Sugar Factory of Cawnpore Sugar Works, Ltd., M/A. Begg Sutherland & Co., Ltd., P. B. 21, Cawnpore.	Cooperganj.	Do.	Cawnpore. Do.	Gur only.
125. Harcourt Butler Experimental Sugar Factory.	Nawabganj.	Do.	Rawatpur Do.	24*

PUNJAB.

126. *Punjab Sugar Corporation Ltd., M/A. Ganesh Flour Mills, Co., Ltd., Delhi.	Sonepat	Rohtak	Sonepat	N. W. R.	300*
127. Jagatjit Sugar Mills. Co., Ltd., M/A. Narang Brothers & Co., Ltd., 5, Montgomery Road, Lahore.	Phagwara	Kapurthala State.	Phagwara	Do.	400 DO
128. The Phulerwan Sugar & Oil Mills, Ltd., M/A. Radhakrishna Bros.	Phulerwan	Sargodha	Phulerwan	Do.	
129. Gujranwala Sugar Mills, Co., Ltd., M/A. Narang Bros., & Co., Ltd. Lahore.	Rahwali	Gujaranwalla	Rahwali	Do.	300
130. The Bhalwal Sugar Mills Co., Ltd., M/A. Capt. Malik Sardarkhan Noon, Tahsil Bhalwal.	Bhalwal	Shahpur	Bhalwal	Do.	100
131. Harkishan Sugar Mills, Ltd.,	Amritsar	Amritsar	Amritsar	Do.	Gur only.
132. Amritsar Sugar Mills, & Co., Ltd., M/D. Sardar Amar Singh, Amritsar.	Do.	Do.	Do.	Do.	Gur only.
133. The Lakshmi Sugar & Oil Mills, Ltd., M/D. B. Bansidhar Sahab, Chatiwind Gate, Amritsar.	Do.	Do.	Do.	Do.	Gur only 300 mds.
134. Shree Guru Arjundev Sugar Mills M/A. Seth Sunder Singh, Butari.	Butari	Do.	Butari	Do.	600 DS
135. *Saraswati Sugar Mills of The Saraswati Sugar Syndicate, Ltd., 10, Dinga Singh Building, The Mall, Lahore.	Abdullapur	Ambala	Jagadhri	Do.	450

Name of Factory, with full name and address of Managing Agents or Proprietors.	Location.	District.
136. |Punjab National Sugar Mills, Prop : Messrs. Sh. Mohammad Ismail Maula Bakhs, Lyallpur.	Lyallpur	
137. †Dinanagar Sugar Mills, Dinanagar.	Dinanagar	Gurdaspur
<u>MADRAS.</u>		
138. Aska Sugar Works & Distillery, Prop. Messrs. Paramananda Sahu, and others	Barhampur	Ganjam
139. Shree Ram Krishna Co-operative Industrial & Credit Society Ltd.	Tummapala	Vizagapatam
140. Etikoppaka Sugar Factory. M/A. The Etikoppaka Industrial, Co-operative & Credit Society Ltd.	Etikoppaka.	Do.
141. †The Sri Rama Sugar Mills Ltd., Prop : Raja of Bobbili, Shree Kumar Rajah of Venkatagiri, and others.	Bobbili	Do.
142. †The Co-operative Industrial and Credit Society, Perikidu, near Nuzvid Ry-Station.		
143. †The Vuyyuru Co-operative Industrial and Credit Society, Ltd.	Vuyyuru	Kistna
144. *Deccan Sugar and Abkari Co., Ltd., M/A. Parry & Co., Ltd., P. B. No. 12, Madras	Samalkot.	East Godavari.
145. |Shri Ram Krishna Sugar Mills, Prop ; Rajah Ravi Ram Krishna Ranga Rao Bahadur, Zamindar of Kirlampudi, Bobbili and R. B., O. V. S. Narsimha Raju Garu, Etikoppaka.	Kirlampudi	Do.
146. *The East India Distilleries and Sugar Factories Ltd., M/A. Parry & Co., Ltd., P. B. 12, Madras,	Nellikuppam.	South Arcot.
147. The India Sugars and Refineries Ltd., M/A. A. Ranganatham & Co., Hospet.	Hospet.	Bellary.
148. †The Hospet Sugar Mills, Ltd., M/A. Johnson & Co., Bellary Cantt.	Hospet.	Bellary.
149. Coimbatore Lakshmi Sugar Mills, Ltd., M/A. G. K. V. R. Co., Podanur.	Podanur.	Coimbatore.
150. Al. Vr. St. Sugar Mills and Distillery Prop : Al. Vr. St. Veerappa Chettiar. Zamindar of Devaram, Devakottah.	Tachanallur.	Tinnevelly.
<u>TRAVANCORE.</u>		
151. The Travancore Sugar Mills, Ltd., M/A. Vinayaka Kumar & Co.	Thuckalay.	Trivendrum.

Nearest Railway Station.		Daily crushing capacity in tons.	
Lyallpur	N. W. R.	70	
Barhampur	B N. R.		
Anakapally	M S M R	50	S
Narasapatam	Do.	50	DS
Bobbili	B N. R	150	
		150	
Bezwada	M. S. M. R.	850/1200	
Samalkot,	Do.	Gur only 40 tons.	O
Do.	Do.	80	
Nellikuppam,	S. I. R.	850*	O
Hospet,	M. S. M. R	400*	DS
Hospet.	M. S. M. R.		
Podanur,	S. I. R.	Cane & jaggery 50-150	
Tinnevely Jn.	Do.	Gur only	
Trivendrum,	S. I. R.	Gur only	

(18)

(19)

Name of Factory, with full name
and address of Managing
Agents or Proprietors.

Nearest Railway
Station.

Daily crushing
capacity in
tons.

MYSORE.

162. *Mysore Sugar Co., Ltd.,
H. O. Seshadri Road,
Bangalore.

Mandya.

Mysore State.

1500

DS

BOMBAY.

163. *The Kolhapur Sugar Mills,
M/A. Shirgoker Bros.,
Shahupuri, Kolhapur.

Kolhapur

Kolhapur
State

450'

DS

164. The Saswad Mali Sugar Factory, Ltd.
M/D. H. B. Ghiml Esq.,
Kopergaon.

Akluj.

Sholapur.

{ Pandharpur
Diksal,

300

165. The Phalton Sugar Works,
M/D. Vaman Shridhar Apté, Esq.,
815, Girgaum Back Road, Bombay.

Pimpalwadi.

Satara.

400

166. *Kalambe Sugar Works of
Maraland Price & Co., Ltd.,
M/A. The Premier Construction Co., Ltd.,
Phoenix Building, Ballard Estate,
Fort, Bombay.

Kalambe.
P. O.
Baramati.

Poona.

450

S

167. *The Maharashtra Sugar Mills, Ltd.,
M/A. M. L. Dahanukar & Co., Ltd.,
Kalbadevi Road, Bombay.

Tilaknagar.
P. O. Belapur.

Ahmednagar.

250

S

168. *The Belapur Co., Ltd.,
M/A. W. H. Brady & Co., Ltd.,
Royal Insurance Building,
Church Gate Street,
Fort, Bombay.

Harigaon.

Ahmednagar

600

159. *†The Ravalgaon Sugar Farm Ltd.,
M/A. Walchand & Co., Ltd.,
Phoenix Building,
Ballard Estate, Bombay, S

160. *†The Pioneer Sind Sugar Mills, Co., Ltd.,
M/A. Mohata Mukhi & Co., Ltd.,
P. B. 23, Karachi, S

161. *†Shree Bhagawat Singhjee Sugar
Works Ltd.,
M/D. M. N. Chinoy Esq., Gondal, 60~

CENTRAL INDIA.

162. †The Jaora Sugar Mills,
Proprietor, Kaluam Govindram
Jaora (C. I.) 250

BURMA.

163. *The Sahnaw Sugar Factory of the
Burma Sugar Co., Ltd.,
M/A. Finlay Fleming & Co.,
Merchants St., Rangoon. S 699

164. *†The Zeyawadi Sugar Factory Ltd.,
M/D. Chandradeva Prakash Sinha, Esq.,
Zeyawadi (Burma) 700/890 DS

165. †The Thaton Sugar Works Ltd,
M/A Messrs Robertson & Co.,
P. B. 883, 89, Strand Road, Rangoon.

Hninpale
P. O. Bilin
Thaton
(L. Burma)

Hninpale.

**PROVINCIAL DISTRIBUTION
OF
SUGAR MILLS IN INDIA
(1935).**

Province.	No. of factories working with cane	Gur refineries only.	TOTAL.
1. Bengal	9	...	9
2. Bihar & Orissa ..	36	1	37
3. United Provinces ...	75	4	79
4. Punjab	9	3	12
5. Madras	11	2	13
6. Travancore ... ..	...	1	1
7. Mysore	1	...	1
8. Bombay	9	...	9
9. Central India ..	1	...	1
10. Burma	3	...	3
TOTAL	154	11	165

No. of factories actually working in the season 1934-35 (about)	138
No. of factories projected for working during 1935-36	25
Total No. of factories within the membership of the Indian Sugar Mills Association (on 1st June, 1935)	102

FOR EASY & COMFORTABLE

Cooking. Live

PIE COKE

See The Difference

THE RESULT OF COOKING
WITH CHARCOAL OR WOOD

AMERICAN CANNED FOODS COMPANY

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Better Breeze at HALF the COST

THE MOST EFFICIENT FAN !

The India Fan

ALL SIZES—ALL VOLTS.

Least Consumption

Large Displacement

AT DELHI

To comfort the Staff

OF

**THE GOVERNMENT OF
INDIA.**

WERE INSTALLED

2,000

INDIA FANS

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LAST YEAR.**



Chosen for their Reliability, Durability and Economical Running Costs.

Runs 20 hours a Unit at full speed and 42 hours a Unit at first speed.

"Kiddy Rohtas 36" runs 30 hours at full speed.

AWARDED GOLD AND SILVER MEDALS.

With every Ceiling or Table Fan (D. C. or A. C.) get a 2 years' guarantee.

Indian Design, Indian Management, Indian Capital.

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CALCUTTA.
